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THE
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NOTICES TO CORRESPONDENTS.

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Authors of Communications are requested to write the prescriptions in their paper in full, and in English.

Books and Periodicals published in Northern Europe and the German States intended for our Journal, should be transmitted "For the Editor of the Dublin Journal of Medical Science, care of Messrs. TRUBNER and Co., London," through the following Houses, viz.:—Messrs. SCHNEIDER and Co., Berlin; Messrs. BRAUNFELLER and SON, Vienna; M. F. A. BROCKHAUS, Leipzig; and also their Correspondents in the principal Towns on the Continent. Our Correspondents in France, Belgium, Italy, and Spain, are requested to communicate with us through "Messrs. HACHETTE and Co., 77, Boulevard St. Germain, Paris."

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1. The British and Foreign Medico-Chirurgical Review. Churchill.
2. The Edinburgh Medical Journal. Oliver and Boyd.
3. The Retrospect of Medicine. Edited by W. Braithwaite. Simpkin, Marshall, and Co.
4. Pharmaceutical Journal. Churchill.
5. The Lancet.
6. The British Medical Journal.
7. The Asylum Journal of Mental Science. Churchill.
8. The Glasgow Medical Journal. Dunn and Wright.
9. The Dublin Medical Press and Circular.
10. The Westminster Review. Trübner.
11. Transactions of Obstetrical Society. London: Longmans.
12. The Practitioner; a Monthly Journal of Therapeutics. Macmillan and Co.
13. The Journal of Anatomy and Physiology. Macmillan.
14. The British Journal of Homoeopathy. London: Henry Turner and Co.
15. Irish Hospital Gazette. Dublin.
16. The Obstetrical Journal. London: J. and A. Churchill.
17. The Sanitary Record. London: Smith, Elder, and Co.

INDIA.

18. Indian Medical Gazette. Calcutta: G. Wyman and Co.

AUSTRALIA.

19. The Australasian Medical and Surgical Record. Melbourne: F. F. Baillière.

AMERICA.

20. The American Journal of the Medical Sciences. Edited by Isaac Hayes, M.D. Philadelphia: Henry C. Lea. London: Trübner and Co.
21. The American Journal of Science and Arts. Conducted by Professors B. Silliman, and J. D. Dana, &c. New Haven: Editors.
22. The American Journal of Insanity, Utica, N. Y. State Lunatic Asylum.
23. The American Journal of Obstetrics and Diseases of Women and Children, New York: W. A. Townsend and Adams. London: S. Low, Son, and Marston.

AMERICA.—continued.

24. Canada Medical Journal. Montreal: Dawson, Brothers.
25. The New York Medical Journal. New York and London: D. Appleton and Co.
26. The Medical and Surgical Reporter. Philadelphia: S. W. Butler, M.D.
27. The Medical Record. New York: Wood & Co.
28. The American Practitioner. Louisville, Ky.: John P. Morton and Co. London: C. D. Cazenove.
29. The Philadelphia Medical Times. Philadelphia: J. B. Lippincott and Co.
30. The Sanitarian. A. S. Barnes and Co., 111, William-street, New York.
31. The American Chemist, School of Mines, Columbia College, East Forty-ninth-street, New York.

FRANCE.

32. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles scientifiques, nationales et étrangères, &c. Paris: Labbé.
33. Gazette Médicale de Paris. Paris: 4, Place Saint-Michel.
34. Journal de Pharmacie et de Chimie, &c. Paris: Victor Masson.
35. L'Union Médicale. Paris: Bureau, Rue de la Grange-Batelière.
36. Echo de la Presse Médicale, Anglaise, Française, et Etrangère. Paris: 13 Boulevard de Courcelles.
37. Archives Générales de Médecine. Paris: Asselin.
38. Bulletin de l'Académie de Médecine. Paris: G. Masson.
39. Revue de Thérapeutique Médico-Chirurgicale. Paris: Dr. A. Martin-Lauzer.
40. Journal de Médecine et de Chirurgie Pratiques à l'Usage des Médecins. Par Lucas-Championnière. Paris.
41. Journal des Connaissances Médicales Pratiques. Paris: J. B. Baillière et Fils.
42. Annales Médico-Psychologiques. Par MM. Baillarger, Carise, et Lunier. Paris: V. Masson.
43. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Par le Docteur Edix Bricheveau. Paris.
44. Répertoire de Pharmacie. Par M. Eug. Lebaigue. Paris: Rue de la Perle, 11.

List of Exchange Journals.

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45. *Gazette Médicale* de Strasbourg.
46. *Annales de Gynécologie*. Paris : H. Lœweryns.
47. *Gazette des Hôpitaux*. Paris : 57, Rue des Saints-Pères.
48. *Lyon Médical*, Organe Officiel de la Société Impériale de Médecins. Lyon : Mégret.
49. *Journal de Médecine Mentale*. Par M. Delasiauve. Paris : Masson et Fils.
50. *Archives de Médecine Navale*. Paris : J. B. Baillière et Fils.
51. *Revue Photographique des Hôpitaux de Paris*. Paris : Adrien Delahaye.
52. *Le Mouvement Médical*. Paris : Rue des Ecoles.
53. *La France Médicale*. 21 Rue de la Monnaie, Paris.
54. *Revue des Sciences Médicales en France et à l'étranger*. Paris : G. Masson.
55. *Le Progrès Médical*. Paris : 6 Rue des Ecoles.
56. *Gazette Hebdomadaire*. Paris : 91, Rue de Lille.

BELGIUM.

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58. *Annales D'Oculistique*. Bruxelles.
59. *Annales et Bulletin de la Société de Médecine de Gand*.

GERMANY.

60. *Vierteljahrsschrift für die praktische Heilkunde*, herausgegeben von der medizinischen Facultät in Prag. Prague: Karl André.
61. *Archiv für Gynäkologie*. Redigirt von Credé und Spiegelberg. Berlin : August Hirschwald.
62. *Wochenblatt der Zeitschrift der k. Gesellschaft der Aerzte in Wien* (Beilage zu den Jahrbüchern). Redigirt von A. Duchek, C. Langer, A. Schauenstein. Leipzig: Heinrichs.
63. *Deutsches Archiv. für Klinische Medicin*. Erlangen: Th. Blaesing.
64. *Jahrbuch für Kinderheilkunde und Physische Erziehung*. Leipzig : B. G. Teubner.
65. *Archiv für pathologische Anatomie und Physiologie, &c.* Herausgegeben von R. Virchow. Berlin: G. Reimer.
66. *Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medicin*. Herausgegeben von Damerow, Flemming.

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- Roller; durch Heinrich Laehr. Berlin : Hirschwald.
67. *Berliner Klinische Wochenschrift* Berlin : Hirschwald.
68. *Archiv für Klinische Chirurgie* Herausgegeben von Dr. B. von Langenbeck. Berlin: Hirschwald.
69. *Monatsschrift für Geburtshunde und Frauenkrankheiten*. Berlin: Hirschwald.
70. *Archiv für Psychiatrie und Nerven Krankheiten*. Berlin : August Hirschwald.
71. *Centralblatt für die medicinischen Wissenschaften*. Berlin : August Hirschwald.

HOLLAND.

72. *Archiv für die Holländischen Beiträge zur Natur- und Heilkunde*, Herausgegeben von F. C. Donders, Utrecht, und W. Berlin, Amsterdam, Utrecht: C. Van Der Post.

NORWAY.

73. *Norsk Magazin for Lægevidenskaben*. Udgivet af det medicinske Selskab i Christiania. Redigeret af Schoenburg. E. Winge. Bidekap. Christiania: Paa Th. Steens Forlag.

SWEDEN.

74. *Hygiea, Medicinsk och Farmaceutisk Maonads-skrift*. Stockholm: P. A. Norstedt och Söners förlag.
75. *Nordiskt Medicinskt Arkiv*. Redigeradt af Dr. Axel Key, Prof. i Patolog. Anat. i Stockholm. Stockholm: Samson och Wallin.
76. *Uppsala Lakäreförenings Forhandlingar*. Upsala: Ed. Berling.

DENMARK.

77. *Hospitals-Tidende*. Optegnelser af praktisk Lægekunst fra Ind- og Udlandet. Copenhagen : Jacob Lund. London : Asher and Co.

ITALY.

78. *Bulletino delle Scienze Mediche*. Pubblicato per cura della Società Medico-Chirurgica di Bologna.
79. *Giornale Veneto di Scienze Mediche*.
80. *Lo Sperimentale Giornale Critico di Medicina e Chirurgia per servire ai Bisogni dell'Arte Salutare*. Direttore Prof. C. C. M. Butalini. Florence.

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MEDICAL SCIENCE.

JANUARY 1, 1875.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Nature, and her Medicine.* By PROFESSOR OLUF LUNDT BANG, M.D., of Copenhagen; Privy Councillor; Grand Cross of the Order of the Dannebrog; Commander of the Order of Vasa; Knight of the Dannebrog, &c.*

NATURE or Art? That is the question. Under what circumstances is Nature able to cure a disease, and under what circumstances is it necessary to seek the aid of Art? What is Nature? Not a peculiar vital force, but the organism defending, preserving, restoring itself by increased activity in the vegetative sphere—appearing too often as anomalous, and, therefore, unjustly called “Disease,” instead of a “Remedy.” Nature is an internal physician, our ever-present colleague—unconscious, but abiding Divine laws, *seeking to restore health*, or, should that be impracticable, *at least to preserve life as long as possible*. For these ends Nature makes use of several *medendi methodi* and remedies.

I. The Methods of Nature:—

1. REACTION, by which the morbid stimulus is removed, if it has not already disappeared, and the disorders caused by it are controlled—*e.g.*, vomiting, suppuration.

* This communication, from the pen of our veteran Danish colleague, Dr. O. Bang, of Copenhagen, has been forwarded to us for publication. It will be read with special interest when we add that Dr. Bang wrote the article in English.—[THE EDITORS.]

2. VICARIOUS ACTION.—An attempt to direct such functional activity as may be held in check by cold, pressure, &c., to an organ in which congestion will cause the least possible harm—*e.g.*, the mucous membranes.
3. LOCALISATION.—An attempt to cure an essential disease, to purify the blood, by setting up a topical complaint—*e.g.*, crisis and metastasis in fever, gout, cancerous tumour, &c.
4. SYMPATHY, REFLEX ACTION, SYNERGY.—The possibility of these as a *medendi methodus* cannot be denied, although they constitute a method seldom observed, nearly always insufficient, troublesome, and dangerous.

It is necessary in debility to distinguish between the pulse of almost extinguished or not restored force and that of depression or derivation. It is also necessary to know when the increased functional activity is produced by reaction, vicarious action, localisation, or sympathetic action, for on a correct appreciation of this point depend the cure and its success.

II. The Remedies of Nature:—

1. Her simple remedy—INCREASED FUNCTIONAL ACTIVITY—
 - (*α.*) Of the *primæ viæ*, and urinary system, to remove the morbid stimulus—*e.g.*, by vomiting diarrhœa, expulsion of gravel, calculi, &c.
 - (*β.*) Of the vascular system—*e.g.*, exudation of healing and nutritive fluid, hæmorrhages, excretions, absorption of morbid fluids and growths, &c.
2. Her composite remedies—
 - (*α.*) INFLAMMATION.—The stimulation of the capillaries, whether of idiopathic or sympathetic origin, produces a congestion—*febris capillaris*—not speedily removed by reflux or efflux. It results in excitement of the proximate arteries—*febris arterialis*—with hyperæmia, immediately followed by adynamia and stasis. This complex form of inflammation by means of exudation elaborates that most indispensable remedial agent, *pus*, capable not only of enclosing and removing the morbid stimulant, but also of restoring the lost, and healing the separated, parts.

(β.) FEVER.—Accelerated circulation of the blood-system during some days or weeks, in general terminating in localisation, and caused by a stimulus in the blood—*febris idiopathica*, or in the periphery—*febris sympathetica*, called to help where the arterial fever is unable to do its duty. Notwithstanding, those most pernicious morbid causes, the infectious poisons, are not destroyed by the fever.

From Hippocrates to the present day a great number of the most celebrated practitioners have acknowledged the *vis medicatrix naturæ*; but very few have made use of the principle at the sick bed, and during many centuries it was denied, overlooked, neglected, or disturbed by injurious theories and long and complex prescriptions. Several causes probably contributed to this. What knowledge and experience are to the physician, blood and nerves are to our internal colleague, Nature. Should these be deteriorated by hereditary taint, bad education, mode of life, &c., Nature will be unable to do her duty, reaction will become insufficient, vicarious action anomalous, localisation misplaced, sympathy more troublesome; in short, the remedy will become a poison. Since this is nearly always the case in civilised States, it is no wonder that the medical practitioner there will seldom concede the *vis medicatrix naturæ*, but it must not be judged according to this standard.

It is not denied, however, that fever and inflammation present a high mortality, although they are the best remedies. But this depends partly upon the unfavourable conditions above-mentioned, partly upon the treatment and its discrepancy with that adopted by Nature. Besides, would not the mortality be greater without inflammation and without fever? Fever is the only antidote, or remedy, in the case of infectious poisons. Ask the surgeon. For him suppuration is an indispensable remedy. A person suffering great pain from gout, cancerous or other morbid growths, or local disease, will scarcely agree in calling these apparent misfortunes remedies, and yet they are such. Without these local manifestations of disease life would not be preserved as long as possible, Nature would not fulfil her cruel duty, often imitated by Art, which applies fire and steel as derivative remedies.

“Our internal colleague,” thought gifted man, “often stands in need of Art, and still more so in a state of civilisation.” In this

case Art must ever be "*Naturæ interpret et magister*," and make use of several *medendi methodi*. She must (1) remove the cause, if she can do so more efficiently than Nature—*methodus causalis*; (2) only observe the disease, if she is certain that Nature can more readily cure it *tuto, cito, et jucunde*—providing a system of hygiene capable of removing every obstacle to the remedial action of Nature, never forgetting to attend to the secondary symptoms, which are often violent and dangerous—*methodus expectativa, symptomatica*; (3) arouse and strengthen the torpid and enfeebled vital force, both constitutionally and locally—*methodus excitans, roborans*; (4) restrain excess, relieve pain, appease spasm, cool the burning heat, and thereby prevent the supervention of many dangerous symptoms—*methodus sedans, temperans*; (5) divert or direct vicarious action and localisation when deviating from the right path—*methodus derivans*; (6) cleanse the blood and the individual organs from the various morbid stimuli, too often a latent cause of the disease—*methodus corrigens, evacuens*; (7) use remedies whose effects are now known by experience—*methodus empirica*.

This "Natural Pathology" can explain better than any other system how it is that the same diseases may be successfully treated with the most different remedies. In many cases Nature deserves even the credit of being competent, not alone to cure the disease, but also to repair the faults committed by Art.

The author of these few lines has been for *sixty* years physician to a great hospital, sixteen years Professor of Clinical Medicine and Therapeutics in the University of Copenhagen, and a much occupied practitioner. The sick bed was the source of the theory here propounded. Would that our age—the age of experiment, of observation, and of fact—might contribute towards its affirmation to the victory of Nature.

ART. II.—On the Means most generally useful for Relieving the Cough, Sweating, and Dyspepsia of Chronic Phthisis. By JAMES LITTLE, M.D., Professor of Practice of Medicine in the School of the College of Surgeons.

IN no disease is a routine treatment more unsuitable than in phthisis. Each case has its own peculiarities, which leave the physician who is fertile in resources endless opportunities for the exercise of his skill; yet the following measures, not in very general use, have appeared to me applicable to a larger number of cases than those more commonly employed.

For the relief of *sweating*, the mineral acids, and such astringent drugs as oxide of zinc and tannin, though recommended, are, according to my observations, very far inferior to two medicines but little used. Five grains of *Dover's Powder* was suggested to me some years ago by Dr. Hayden, and I have since satisfied myself that this dose, administered at bed-time, checks phthisical sweating more frequently than any other remedy. Next to it is *atropia*, or its sulphate. It is best given in pill, $\frac{1}{100}$ grain to $\frac{1}{80}$ grain. As this requires very careful compounding, it is sometimes safer to use the liquor atropiæ—one minim to one minim and a-half; but, whether from the instability of the solution or some other cause, the atropia does not display its power over sweating so markedly when given in solution as when administered in pill. The chill caused by the damp night-dress is not only a great discomfort to the phthisical, but is, I believe, a not uncommon cause of the intercurrent pulmonary congestion to which they are so subject; and all consumptives who sweat should, therefore, wear a large, loose night-dress made of fine *flannel*.

Cough in phthisis may call for different applications to the chest, for stimulating expectorants, and for various other remedies, according to the special state of lung then present; but for the wearying cough peculiar to phthisis, and especially when it prevents sleep at night, I have for some years used a combination which, I think, is more generally useful, and longer useful, than any other with which I am acquainted:—

Acetate of morphia, 2 grains.

Liquor of atropia, 6 minims.

Dilute hydrocyanic acid, 36 minims.

Syrup of Virginian Prune to an ounce and half.

A measured drachm is to be taken, unmixed with water, on going to bed, and once again during the night, if necessary. This combination does not usually cause morphia sickness in the morning; if it does, the sickness is best relieved by sucking a few slices of lemon. When the expectoration is very tenacious, this mixture does not suit so well as one containing small doses of iodide of potassium, with bicarbonate of soda, hydrocyanic acid, and compound tincture of chloroform. To this, small doses of tincture of opium may be added. This is a mixture to be taken at shorter intervals than the one to which I have just referred, and continued until the expectoration becomes easier.

Four years ago I was attending a lady in whom the right lung was almost completely excavated, while in the left there was only a small diseased spot. Her great distress arose from the pain produced during violent fits of coughing by the stretching of the numerous pleural adhesions by which the right lung was tied to the walls of the chest; the cough stretched, and probably sometimes tore these, and the irritation which this produced in its turn provoked fresh cough, so that the fits were incessant and most violent. It occurred to me that if I could prevent the stretching of the old adhesions, I would lessen the patient's sufferings, and with this object I confined the right side of the chest by strips of soap plaster spread on dimmity, four or five inches broad, and long enough to reach round the chest from spine to sternum. One of these I also drew across the shoulder, from the interscapular region behind to the mammary in front. Thus supported, the chest walls were no longer injured by the concussion of the cough, and the greatest relief followed. More recently strapping the chest has been recommended in the early stage of phthisis, for the purpose of limiting the play of the diseased lung. Of its value, when applied with this object, I have not had sufficient experience to enable me to form an opinion, but I have in very many cases given the greatest relief by adopting it under such circumstances as those I have described. Chloral, as a cough reliever, though very generally prescribed at present, has not appeared to me a very satisfactory medicine—at least if given alone. Doses sufficient to check the phthisical night-cough seem to me to produce disturbed sleep and an increased feeling of oppression in the chest. The addition, however, of ten grains to each dose of an opiate cough-mixture will render the effect more immediate, and permit us to use a smaller quantity of the opiate. For consumptive persons who are going about, chloral

lozenges are sometimes a great comfort. I have lately had two young men under my care who went to their offices daily until a few weeks before their death, and in whom the occasional use of a chloral lozenge so quieted cough that they were able to discharge their duties without annoying those around them.

In some consumptive persons digestive disturbance is indicated by the single symptom of utter loss of appetite. In such, I believe, there is only one combination—that of strychnia, with phosphoric or hydrochloric acid—which distinctly does good. It may be given in freshly-made infusion of calumba, or, as Dr. C. J. B. Williams recommends, in infusion of orange. When with loss of appetite there is feeling of load after food, a dessert-spoonful of pepsine wine, with ten minims of dilute hydrochloric acid, in a little water after meals, usually relieves. When, however, instead of these symptoms, we have after meals a feeling which approaches that of pain, with flatulence, cough ending in vomiting, some thirst, and a coated tongue, we must for the time give up tonics and cod-liver oil (if it has been in use); enforce a regulated and rather spare diet; apply counter-irritation to the epigastrium; if necessary, use some of the aperients which act on the upper part of the intestinal tract, and some of the medicines which are good against gastric catarrh—of which the most generally useful in my experience is a mixture (which, like many other invaluable combinations, I learned from Dr. Hudson), containing minute doses of nitre, with bismuth, hydrocyanic acid, and nitric acid.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On Mycetoma, or the Fungus Disease of India. By H. VANDYKE CARTER, M.D., H. M. Indian Army. London: Churchill, 1874. 4to, pp. 115, with eleven coloured plates.

MYCETOMA, or Madura Foot, has for many years formed a subject of study to Dr. Carter, who has had unusual opportunities for investigating its clinical characters and natural history. The results of his researches have been published, from time to time, in different journals, which are not always readily accessible to readers either in this country or in India. The present memoir, therefore, in which he gives us a complete account of all that is known about this formidable disease, will be most welcome to all surgeons and pathologists, and forms a very valuable contribution to medical literature. We shall endeavour to give as complete an abstract of it as is possible within the limited space at our disposal.

We may state, at the commencement, that mycetoma is a local disease, affecting, most frequently, the foot, sometimes the hand, and sometimes, but with extreme rarity, other parts of the body. It is a disease of very slow progress, but which has no tendency to get well of itself. And its cause is believed by Dr. Carter to be a fungus, the germs of which are derived from without, and which, growing in the affected part, produces destruction of the normal tissues.

The earliest symptom noticed is, generally, an induration, seated in or under the skin, which is of darker colour than natural, but without increased heat or tenderness. Vesicles or boils are sometimes early appearances, but are, probably, accidental. At some point in the indurated part softening occurs, a bleb forms and bursts, leaving a sinuous opening, which exudes a thin, sanious, or sero-purulent discharge, mixed with peculiar "fungus particles," whose description we omit for the present, but whose presence in the discharge is diagnostic of the complaint. Other indurations, followed by sinuses, form, and the whole hand or foot becomes enlarged and

indurated. The disease most frequently begins on the plantar surface of the foot, or the palmar surface of the hand. It sometimes remains localised to a small spot for a considerable time, or it may spread rapidly. There are no general symptoms during this stage, and the degree of local discomfort caused is much less than might be expected. This early stage may last for a year or two. In the second or confirmed stage the swelling is increased and the sinuses become more numerous. The hand or foot is embedded in a globular or irregularly-shaped, badly-defined swelling, of firm, elastic consistence, and considerable weight. The skin is dark, with discoloured patches. The temperature of the tumour is generally lower than that of the rest of the surface, and sensation is unaffected. The surface of the swelling is riddled with holes, having pouting openings, forming the commencement of long, tortuous sinuses, which may or may not lead to bone. The discharge is abundant—not actual pus or sanies, but serous or sero-purulent, with faint putrid odour, and containing “fungus particles.” The amount of pain is not very great, but from this and the weight and stiffness of the part, the patient becomes unable to use the affected member. The general health, at first, does not suffer; but, if the discharge be profuse, the constitution becomes undermined—emaciation, hectic, diarrhoea, and dropsy, may occur, and prove fatal.

If a recent case, or the less advanced parts of one more confirmed, be examined, the swelling is found to be caused by an irregular and extended accumulation of a gelatinous, slimy, or slough-like, greenish-tinted substance, which is distinctly isolated from the surrounding parts, and mixed with which are the fungus particles. These lie in groups, and if a sinus has been formed, it leads from one of these collections outwards. At a later stage, a great part of the swelling is caused by an elephantoid connective-tissue growth, situated beneath the skin and in the interstices of deeper seated parts. Traversing this, and the tissues of the foot or hand, are canals whose lumen may equal that of a small quill, and which communicate with one another, and with the exterior, by the openings in the skin. They open internally into globular cavities of various sizes, which, as well as the canals themselves, are lined by a distinct but fine membrane, and which contain a slimy, variously-tinted matter, mixed with fungus particles. These fungus particles are of two kinds, either black or dark-brown in colour, and hard and friable in consistence; or pale-pink, brown, or yellowish in colour, and soft and caseous in consistence. The dark particles vary in

size from that of a pin's head to that of a bullet—the pale, from a minute speck to the size of a pea. They are both globular or ovoid in shape, and irregular on the surface.

Corresponding to this difference in the particles, the author makes two varieties of the disease—namely, the dark or melanoid, and the pale or ochroid. Surrounding the canals and cavities in the pale variety is an orange-coloured layer, which probably indicates an advancing growth of the fungus. A similar explanation is given of pink streaks, which are frequently seen in both varieties in and beneath the skin, mostly in the neighbourhood of the external openings of the sinuses. After the discharge of all the fungus particles, it is possible that a sinus may close up. But such an event rarely occurs, and empty sinuses or cavities are never found. The muscles are atrophied and pale; the fibrous tissues thickened and hypertrophied, and the firm, resisting fasciæ and tendons often appear to determine the direction which the sinuses take. The joints are unaffected except from pressure. The bones are, in most cases, seriously involved, being tunnelled by canals which lead to, and communicate between, globular cavities with contents similar to those mentioned above. Caries or necrosis is not observed, and in general the tissue of the bone is sound, except some roughening of the surface, expansion of the compact tissue, and formation in the periosteum of osseous spiculæ—the marks of chronic inflammatory action. But this is never severe; and, indeed, one of the most remarkable features of the disease is the absence or very slight degree of true inflammation which attends its progress.

Mycetoma is far more frequent in men than in women. It may occur at any age, but is most common from fifteen to fifty. Field labourers are more often attacked than those whose business is carried on in-doors. All castes suffer, and both rich and poor, but the greatest number of cases are met with among the inferior castes, who are, of course, the most numerous. No European has been known to suffer from mycetoma. This is attributed to their wearing shoes out of doors—a habit very commonly neglected by all classes of natives of India. To the same circumstance is due the immunity enjoyed by the Parsees and Jews of Western India. The one cause of mycetoma is believed by Dr. Carter to be the entry of fungus germs into and beneath the skin. These may find their way through a cut or scratch, or they may pass in through a sweat duct or hair follicle, or perhaps through the uninjured skin, between the layers of epidermis. Hence may be readily understood

the safety enjoyed by those whose feet are protected by shoes. The fungus was at one time supposed to flourish only on cotton soil, but it appears that there is no such limitation to its growth, for cases of mycetoma have been reported from every large district of India, except the central provinces, and it is by no means certain that they are exempt. Cases have also been observed at Bussorah on the Persian Gulf, and at Aden. The disease has never made its appearance in Europe.

After inoculation there is a period of latency, whose duration is uncertain, but which is probably never less than a year. Outside the body the fungus—which has been named *Chionyphe Carteri* by Mr. Berkeley—appears only at certain periods of the year (namely, in spring), lasts only a few weeks, and having gone through the stage of fructification, disappears until the next year. But no relation has been observed between the season of the year and the appearance of the first symptoms of mycetoma, which is, of course, a very different thing to the fructification of the parent fungus outside the body. The tumour, the cavities, and the sinuses, are all due to the growth of the fungus in the affected part, and there is no evidence to show that there is any other cause, constitutional or local, for the disease than the existence of this parasitic growth. Before the openings have formed, the diagnosis is difficult or impossible, but at a later period the recognition of the fungus particles in the discharge make the diagnosis easy and certain.

The prognosis is similar to that in the most benign kinds of tumour. As we have said, the disease shows no tendency to get well, but neither does it tend to infect the constitution. The treatment is entirely local—excision of the diseased part if it be small, and, if more extensive, partial or total amputation. The results of operation are most favourable, and if care be taken to remove all the infected parts, there is no risk of recurrence. Even those surgeons who looked on mycetoma as a constitutional disease of a scrofulous or other character, resorted invariably to operation, the good results of which go far to disprove their view of the nature of the disease. The removal of the tumour may be effected by caustics, and the author suggests that trial should be made by injection, into the sinuses, of antiseptics, or of some of those non-caustic substances which prevent the growth of lower organisms.

We have now to give a more detailed account of the two kinds of fungus particles, and their relations to each other and to other kinds of growth.

The black particles, as we have said, vary in size, from $\frac{1}{40}$ -inch to the size of a pistol bullet. The large masses are spheroidal in shape, and, not being able to pass through the sinuses, remain in the cavities, while the smaller particles, which appear in the discharge, are irregular in form, and are evidently fragments of the larger bodies. On section of one of the latter, it is seen to have a rich deep brown colour, with a thin jet-black periphery, or cortex. The surface of the interior has a radiated aspect, caused by numerous branching fasciculi, which form the bulk of the particle, and run from the centre to the circumference in a very regular manner. Their peripheral extremities, or lateral branches, bear one or more deep tinted, terminal, globular, and very firm expansions, which may be $\frac{1}{40}$ -inch or more in diameter, the fasciculi themselves ranging from $\frac{1}{400}$ - $\frac{1}{300}$ -inch in diameter. The outer cortex of the larger masses and the whole of the smaller particles are composed of clear orange-tinted oval or angular cells, $\frac{1}{3000}$ - $\frac{1}{1300}$ -inch in diameter. They are arranged in series, and appear to have originated by continuous budding in one line. They are closely placed, so as to form a compact structure, and embedded in the mass are found larger vesicular bodies, with thick walls and granular contents, and a diameter of $\frac{1}{800}$ -inch. Their relation to the cells is not very evident, "although they, doubtless, arise at the extremities of the compressed beaded fibres by gemmation and expansion." Spores have never been seen in their interior, but bulgings, or rupture of their wall is sometimes noticed, or the off-shoot of a beaded fibre. The reddish-brown central portion of the larger masses is composed of slender, pale, flattened, and branching fibres of a homogeneous appearance, and having a diameter of $\frac{1}{3000}$ - $\frac{1}{5000}$ -inch. These are arranged in bundles, forming the fasciculi seen with the naked eye or a lens. Mixed with them are granules and beaded fibres, whose septa are badly marked, as if they were passing into a homogeneous state. These flat non-beaded fibres are supposed to be an imperfectly developed mycelium, while the beaded fibres are irregularly developed or aborted organs of fructification, bearing in their midst the larger bodies, which are stunted sporangia or reproductive gemmules. The whole is supposed to be quite analogous to the sclerotia of moulds.

The vegetable nature of these particles is further borne out by their resistance to reagents.

The second kind of fungus particles, or those which are found in

the ochroid variety of mycetoma, are called by the author "malacotia," to indicate their soft consistence, as contrasted with the hardness of the black particles, or sclerotia. They vary in size from a scarcely visible speck to masses the size of a pea. They are of soft cheesy consistence, and pale pink, yellow, or orange colour. Each particle is composed of an aggregate of elements, whose number and arrangement appear to be a matter of accident. Each ultimate element has a fatty fringe, formed of crystalline spiculæ, and a central body. This is spherical or oval, of diameter from $\frac{1}{150}$ - $\frac{1}{300}$ -inch. It is not a cell, as the existence of a wall is in most cases doubtful, but it is composed of a great number of minute refracting granules, held together by an intermediate gelatinoid material. Sometimes these particles appear to be ranged in rows, or even to show indications of a filamentous character, but usually such appearances are not noticed. The crystalline fringe dissolves in ether and other fat-dissolving fluids, but the central body resists the action of reagents in a remarkable degree.

It hence appears that the microscopic evidence of a fungus structure in the malacotia is much less strong than in the sclerotia. But transitional forms are met with, which, together with the results of culture experiments to be afterwards noticed, make it probable that not only are the malacotia of a vegetable nature, but that they are a form of the same fungus as that which produces the sclerotia. On the one hand, specimens of the dark-coloured friable particles are met with in which the cellular and filamentous structure is completely lost, from a process of, presumably, fatty degeneration; and on the other, soft pale particles have been seen which are formed of beaded, cellular, radiating fibres, each fibre terminating in an oval expanded cell.

In both dark and pale varieties of mycetoma there are noticed, as we have said, in the skin and in the subcutaneous tissue, pink-coloured stains, which often have a radiating, or branching, shape, as if they prefigured the site of future canals or tunnels. They occur most frequently in the neighbourhood of the openings of the latter, and are supposed by Dr. Carter to be due to inoculation of fresh portions of the skin by germs contained in the discharge from the sinuses. The pink stains are formed of minute bright-tinted globules, which measure $\frac{1}{400}$ - $\frac{1}{500}$ -inch in diameter. These lie sometimes enclosed in tubes, as if the duct of a sweat gland were filled with them, sometimes in oval or spherical masses embedded in a mucous or jelly-like material. Mixed with these are seen

larger corpuscles, and sometimes fungus filaments. Lately the connexion between the class of organisms called schizomycetes and ordinary moulds has been the subject of much investigation and discussion. Hallier and some other observers maintain that the spores of fungi break up into bacteriæ, and that from these, according to the condition under which they are placed, one or other kind of mould may be developed. This view has found but little favour among botanists, but Dr. Carter appears inclined, although with caution, to accept it, and to look on the globules embedded in mucoid material which are found in the pink stains as a glæogenous form of bacteriæ, or micrococci, which subsequently develop into the fungus particles found in the fully-formed cavities and tunnels.

Extremely interesting are the results of attempts to grow the fungus of mycetoma out of the body. It has been found that amputated specimens of the disease, placed in preparation jars, became covered with a red mould, which appeared only at a certain period of the year—namely, in Bombay, from April to August—and died out gradually. Particles of the fungus taken from the discharge, and planted on cotton soil, rice paste, &c., gave rise to a similar growth of red mould. This has been examined by Mr. Berkeley, who pronounces it to be a fungus, and believes it to be the parent mould, or normal form, of the fungus particles of mycetoma. Thus may be expressed the place which it would occupy in the current classifications of the day—

I.—Class,	-	-	-	<i>Fungi.</i>
II.—Order,	-	-	-	<i>Physomycetes</i> , Berk.
III.—Sub-order (Family),	-	-	-	<i>Mucorini</i> , Fr.
IV.—Genus,	-	-	-	<i>Chionyphe</i> , Thien.
V.—Species,	-	-	-	<i>Carteri</i> , Berk.

The species is called after Mr. H. J. Carter, from whom Mr. Berkeley received his specimens.

Chionyphe Carteri has been observed to grow both from the particles of the melanoid and of the ochroid variety of mycetoma, but in the artificial growth appearances have never been seen resembling the malacotia or sclerotia of the disease:—

“But this is a circumstance which might have been anticipated, because the red mould results from the normal mode of development of a parent form, which gives rise to these particles only under the abnormal

conditions of growth obtaining amid the textures of the human foot" (p. 89).

"*Chionophye Carteri*, as defined by Berkeley, has not as yet been found apart from connexion with the pathological products, or in what may be termed its natural habitat; but, as Berkeley observed, this circumstance need excite no surprise, as so little attention has hitherto been paid to the minute fungi of India, and further observation, will, doubtless, demonstrate immediate connexion of some of the latter with this disease" (p. 93).

It would hence appear that all the symptoms of mycetoma are caused by the growth of an entophyte within the body. That this entophyte occurs in different forms:—1. As the hard, black, particles which present a cellular, or filamento-cellular structure, which germinate without (and sometimes show a tendency to germinate within) the body, and which must be regarded as the sclerotia of *Chionophye Carteri*. These particles may undergo a change, perhaps of a degenerative character, by which their fungus structure is lost, their tint becomes pale, and their consistence soft, but their form and size remain unaltered. 2. As the pale, soft, particles, of which there are varieties—(a.), those which, to the naked eye, present nothing unusual, but which are composed of fungus structure, as well marked as in the case of the black particles; these are not surrounded by a crystalline envelope, and they develop, by germination, an abundant crop of red mould. Particles of this description have hitherto been met with in only one case, which was not distinguished by any peculiar clinical history or local sign. (b.) Another case, also ordinary in symptoms, but unique in the structure of the particles, which occurred in the form of small, pink, or red grains, like those of Cayenne pepper. They were "either globular, ovoid, bipartite, or even quadrate in form, as if undergoing regular segmentation." Clusters of such particles existed, but there was no trace of a crystalline envelope to any of them. The artificial germination of these was not attempted. (c.) The common, pale, particles, described above, which present a crystalline coating of fatty spiculæ, by which they are often bound together in masses, so as to resemble the roe of fishes.

The cases in which these particles occur differ slightly, if at all, in their clinical history or local appearances, from those in which the dark bodies are found. Both varieties of the disease appear side by side under precisely similar external conditions. It will hence appear that the acceptance of the author's view, as to the

entophytic nature of mycetoma, must depend very much on whether the vegetable nature of these pale particles be admitted or not. The following quotation will give the most mature views of Dr. Carter on this important point:—

“My own conception is, admittedly, a hypothetical one; but I am still disposed to hold, with modifications, the view advanced in my earliest memoirs—namely, that in these instances of the ochroid variety of mycetoma, ‘the fungus has undergone some change, *e.g.*, died and degenerated; this seems not unlikely, for . . . there are indications of the original structure to be detected when carefully looked for; . . . the crystalline coat possibly indicates the death of the fungus’ (1860). The actual occurrence of particles similar in physical characters and position, which really possessed an undoubted fungus structure, was, however, the chief foundation of this view; and subsequent experience, wherein it was proved that *Chionyphe* may spring from these as from other varieties of particles, has strongly confirmed the general accuracy of my original impression. Further inquiry, since my late temporary return to England, has led to an expansion of these ideas; and I am now inclined to regard the bodies in question as essentially masses of Protoplasm, and identical with the Micrococcus or Bacteria-colonies, well known to microscopists.” “Since the bacteria masses are not dead or degenerated clusters, it may be assumed that neither are so the morbid fungus particles; and evidence of their vitality is forthcoming in the fact that they have been seen to give rise to, or revert to, the parent species, *Chionyphe*. In the last place, and as regards all those structural masses, in which no more is apparent than fine granules disseminated through a translucent matrix, and which, therefore, have just been compared to aggregations of bacteria growth, one might ask if such masses do not strictly correspond in nature, properties, or even development, with the Sclerotia of Fungi proper; that is, may they not represent a stage or mode of growth which has for its origin a similar intent, namely, the temporary but sufficient enclosure in simple and least exposed form of the general and specific qualities of the organisms concerned; the final purpose being that reached in higher modes of life by bud or ovum. It is partly from a conviction that the pale, soft, particles of the ochroid form of mycetoma are, essentially, of a nature corresponding to the highly contrasted black, hard, bodies, that I have ventured to propose a new name for them, bearing some indication of their similarity, *Malacotium* being correlated with *Sclerotium*” (p. 100).

“Dogmatically stated, the fundamental observations arrange themselves thus:—

“1. The parasitic growth always commences and proceeds in the same manner.

"2. Its earliest visible traces exist in the form of spherical collections, identical with the so-called zoogloea masses (Bacteria forms).

"3. Subsequent development varies:—

"a. A simple cellular fungus appears, which produces the Sclerotia.

"b. Spheroidal fine-grained masses remain, which are the Malacotia.

"4. Both these last-named products contain germs of *Chionyphe*" (p. 101).

We must, nevertheless, mention that, however strong the evidence may appear as to the parasitic nature of mycetoma, there are some who refuse to accept it as conclusive. In the *Microscopical Journal* for July of the present year, page 263, will be found an unbelieving article, quoted from the *Indian Medical Gazette*, with an answer, by Mr. Berkeley, to the objections raised in it. Dr. Carter may be wrong, but, if so, he is going astray in very good company when he has Mr. Berkeley on his side.

The work we have thus imperfectly attempted to analyse concludes with a very complete bibliography of mycetoma. To it are appended eleven coloured plates, from drawings by the author, illustrating the appearances of the foot and hand in the different varieties of the disease, and the naked eye appearances and microscopic structure of the fungus particles. These plates are of a high order of excellence. Indeed, Dr. Carter's book is not only, as we said at the commencement, a very valuable contribution to the literature of its subject, but one of the handsomest volumes which has, for a long time, issued from the British medical press.

WORKS ON DISEASES OF THE EAR AND EYE.

1. *Lectures on Aural Catarrh; or, the Commonest Forms of Deafness and their Cure* (partly delivered at St. Mary's Hospital). By PETER ALLEN, M.D., &c., &c. Second Edition; Revised and Enlarged. London: J. & A. Churchill, New Burlington-street. 1874.
2. *The Surgical Diseases of the Ear*. By Prof. Von TRÖLTSCH. *The Mechanism of the Ossicles and the Membrana Tympani*. By Prof. HELMHOLTZ. Translated from the German by JAMES HINTON. The New Sydenham Society. London. 1874.
3. *Report of 105 Cases of Operations for Cataract*. By B. JOY JEFFRIES, A.M., M.D., Harv.

4. *Ophthalmologische Mittheilungen aus dem Jahre 1873.* Von Dr. Med. ALBERT MOOREN, dirigirendem Arzt der städtischen Augenklinik zu Düsseldorf. Berlin: Hirschwald. 1874. *Ophthalmological Communications from the Year 1873.*
5. *A Popular Description of the Human Eye, with Remarks on the Eyes of Inferior Animals.* By W. WHALLEY, M.R.C.S.E. With Forty Illustrations. London: J. & A. Churchill, New Burlington-street. Bradford: T. Bear, Kirkgate. 1874.

THE second edition of the late Dr. Allen's work on aural catarrh deserves, even in a higher measure, the encomium we accorded to the original edition. It is a most practical and useful work, and is replete with sound information and practical knowledge, valuable alike to the student or the special practitioner.

It is with deep regret we write of the author in the past tense, his illness having proved fatal before the twelfth and last of these lectures was fully prepared for the press. He was an earnest and conscientious labourer and seeker after truth, and it is with melancholy pleasure we re-echo Mr. Haynes Walton's confident recommendation of the production of one whom we "thought so highly of as an honest and gifted practitioner of aural surgery."

The New Sydenham Society issued, in 1863, a full and complete translation of Kramer's "Aural Surgery of the Present Day," a work which only reflected the opinions of a previous period, and in which deafness in England was attributed to the habits of washing, tubbing, bathing, &c. We regret that this Society, having thought fit to issue another German work on aural surgery, perhaps with the idea of making atonement for past errors, did not publish a full and unabridged translation of v. Tröltsch's excellent work, more particularly as they had secured the services of Mr. Hinton, who, from his great practical experience and powers of thought, was pre-eminently fitted to translate and edit such a work. The present translation is valuable for its notes and references, but does scant credit to the author of the original. There are those, no doubt, who will also cavil at this publication on the grounds of the original being already well known to every specialist as well as to a large section of the profession through the various German editions, as well as through St. John Roosa's voluminous and well-illustrated American edition, published in the English language in 1869. As showing the popularity of the work under consideration,

we may mention that it has been translated into French and Italian. As the original has been fully noticed in the *Dublin Quarterly Journal*, it is not necessary to enter again into details.

Helmholtz's pamphlet on the Mechanism of the Ossicles and the Membrana Tympani is a short but most philosophical contribution to the physiology of hearing. Its perusal has created in us a wish to see the whole of his writings on acoustics collected and presented to us in a form similar to the present translation. In the pamphlet before us Helmholtz maintains the correctness of Ed. Weber's view, that in the conduction of sound the ossicles and the petrous bone are to be considered as firm, incompressible bodies, and the labyrinth water as an incompressible fluid; that the ossicles are to be considered as a firm lever, and the labyrinthine fluid as a mass of liquid to be moved only as a whole. The anatomy of the ossicles and of the membrana tympani in its physiological relations and significance is fully entered into. We would direct the particular attention of anatomists and physiologists to this most interesting addition to our knowledge. The rôle assigned to the radial fibres of the membrana tympani and to the malleo-incudal articulation, especially in shielding the labyrinth from extreme pressure, is highly interesting.

Mr. Whalley's is an instructive little work, which contains much information on the comparative anatomy of the eye, condensed into a small compass. Notwithstanding that this little book is expressly intended to be "popular," we cannot but take exception to the short paragraph treating of the retina, in which that most beautiful membrane, made up of so many wondrous parts, is said to consist only of the nerve fibres, and these are said to be the seat of vision. It is well known that the nerve fibres form only a very small portion of the retina, and they are generally regarded as simply conducting apparatus. In like manner, we must take exception to Mr. Whalley's assertion, that the seat of colour-blindness resides in the "cerebral portion of the visual organ."

Dr. Mooren's ophthalmological communication is an outline sketch of the author's labours in the Ophthalmic Hospital at Düsseldorf, during the year 1873, and is characterised by that thoroughness and earnestness, as well as practical utility, which were so manifest in his *Ophthalmiatische Beobachtungen*, noticed

by us on its appearance. The present report refers to 5,768 new cases, of whom 695 were treated in the Ophthalmic Hospital, which contains 85 beds, and 576 in adjoining lodging-houses, or the convent. Amongst the 993 operations performed during the year, 185 were primary extractions of cataract, 380 iridectomies, and iridotomies, and 262 ordinary strabismus operations.

As the result of 1,500 Graefean extractions, Dr. Mooren states his average loss is from 6 to $6\frac{1}{2}$ per cent.

We would commend this work as a model for others to copy. In fact, so much do we look upon it as a model, that we regret a brief financial statement has not been appended to it, so that we might also contrast the Düsseldorf Ophthalmic Hospital, in its expenditure, with similar institutions in this country.

The number of Dr. Joy Jeffries' extractions is too limited to base any arguments upon, but he prefaces his statistics with some admirable observations, useful alike to the operating surgeon and to the patient. For the latter, Dr. Jeffries robs the operation of extraction of all its terrors, and shows the operation to be painless, even when followed by suppuration.

The Histology and Histochemistry of Man: a Treatise on the Elements of Composition and Structure of the Human Body. By HEINRICH FREY. Translated from the fourth German edition. By ARTHUR E. J. BARKER. London: Churchill. 1874. Pp. 683.

It is with sincere pleasure that we welcome the appearance of this translation of Professor Frey's excellent handbook. The facts that, in the original, it has rapidly reached the fourth edition, and that it is looked on as a standard work in Germany, the home of histology, are a sufficient guarantee that it may be accepted as a trustworthy guide by English students in microscopy. A work such as this is must necessarily be mainly a compilation, but in the present case the compilation is made by one of the most accomplished microscopists in Europe, a man who has by his own original investigations enlarged the science of histology in many directions, and who has controlled, by independent observation, in almost every point, the work of others. Thus we find in each chapter not only an account of what has been written on the subject of which it treats, but also a more or less authoritative judgment, from

the author himself, as to what may be accepted as well established, and what must be looked on as still hypothetical.

In comparing the translation before us with the second German edition (1867), we find that the work is almost entirely re-written, and some idea of the amount of new matter added may be gathered from the fact that the number of engravings is increased from 530 to 608. This abundant illustration is a very noteworthy feature in the book, and increases enormously its usefulness. Good drawings have a value which is lasting. The appearances which are seen by a careful observer must always be true, whatever may be the fate of the theories founded on them. As an example of this, we may notice Fig. 297C., a figure dating from the earlier editions, where is delineated what any one who is familiar with the appearances must recognise as one of the constrictions of the medullated nerve fibres which have been recently described by Ranvier,* and which before the publication of his papers had been in the most unaccountable way overlooked by all histologists. In the text no notice is taken of Ranvier's work, and the constriction is attributed to displacement of the contents of the neurilemma by violence in making the preparation.

In a science advancing so rapidly as histology it is impossible that a large handbook, such as this, should contain a notice of all the important investigations made up to the date of its publication. Many of these are too recent to find a place in a book which must occupy a considerable time in passing through the press. But we think that in the present case there will be found as complete and full an account of the actual condition of histological science, as could in any fairness be expected, and certainly the most perfect one to be met with in the English language.

To the translation we can give the most unqualified praise. Mr. Barker is a distinguished pupil of Rindfleisch and Max Schultze, and himself a most accomplished histologist. His name would be a sufficient guarantee that the translation is correct. But it is more than correct, it is good readable English, and contrasts in this respect very favourably with several recent translations from the German, which are often harder to read than the originals. We most heartily congratulate Mr. Barker on the completion of his labours, and hope his success will induce him to give us a translation of Frey's other great work, "*Das Mikroskop*"—the most useful book in existence on histological methods.

* Archives de Physiologie. T. IV., p. 129.

There is one suggestion we should like to make with a view to future editions of the present work—that is, that a bibliography of each subject should be appended to the chapters treating of it. It would most enormously enhance the value of the book, and would add but little to the labour of the author.

But taking it as it stands, we gratefully acknowledge our obligations to the author and translator (not forgetting what we owe to Professor Emerson Reynolds, who revised the chemical part), and recommend it most warmly to the notice of all our readers.

RECENT WORKS ON MEDICINE.

1. *Outlines of the Science and Practice of Medicine.* By WILLIAM AITKEN, M.D., F.R.S., Professor of Pathology in the Army Medical School, &c. London: Charles Griffin and Company. 1874. 8vo, pp. 593.
2. *Essentials of the Principles and Practice of Medicine: a Handbook for Students and Practitioners.* By HENRY HARTSHORNE, A.M., M.D., Professor of Hygiene in the University of Pennsylvania, &c. Fourth edition, thoroughly revised. Philadelphia: Henry C. Lea. 1874. Duodecimo, pp. 548.

By a rather curious coincidence these two works, so akin in their scope and structure, have appeared within a few days of each other—one in America, the other at home. Although Dr. Hartshorne's book has reached a fourth edition, while Dr. Aitken's *Outlines* now appear for the first time, they are still comparable, for the former has been modernised, and the latter is compiled on the same lines as its author's larger work on the "Science and Practice of Medicine."

We may state here, once for all, that both the works under review are good examples of what a systematic text-book of clinical medicine, suitable for the use of students in particular, should be. At the same time we would warn students not to employ such systematic treatises to the exclusion of the classical works of the great masters of clinical teaching—Graves, Watson, Trousseau, Niemeyer and others. For the preliminary training of the student's mind a *σχῆμα* is, no doubt, most desirable; but the true physician soon learns to

estimate at their proper value the too often arbitrary and artificial classifications of disease.

In the *Outlines* we cannot help thinking that Dr. Aitken has, in many respects, improved upon his larger and well-known work. Certainly his subject-matter has frequently gained in quality what it has lost in quantity. As an example of the style of the book, we may quote two paragraphs from the section on small-pox, relative to the curative and preventive treatment of this disease—

“It has hitherto been the belief and orthodox teaching, that small-pox is not under the influence of any specific or antidote—that there is no remedy which will *cut short* the disease—that it must run its course, and that the physician can but try to assuage the untoward symptoms, and avert the dangerous accidents which may arise in the course of the disease. There are some grounds for modifying this belief. The chief physician of Iceland, Dr. J. Hjaltelin, has found that the action of *sulphurous acid gas* may be relied upon as a curative agent. He used it by way of fumigation, burning refined sulphur in the sick-room, so that the fumes of sulphurous acid came to be largely inhaled by the patient. At the same time he gave *sulphurous acid*, mixed with pure water, in the proportion of ʒi. to an ounce of water, repeated every hour. Such treatment had the effect of diminishing eruptive fever, and the vesicles dried up very quickly, leaving the skin covered with thin brown scales, which soon fell off.” P. 126.

“Vaccination is the great preventive of small-pox, and has been rightly made compulsory by law within a certain time after birth, because, in proportion as it is *efficiently* performed, it greatly modifies the disease, so much so that *perfect* vaccination is almost absolute security against death from small-pox. It diminishes also the prevalence, extension, and force of epidemics of small-pox.

“Re-vaccination should also be made compulsory at the age of ten years, or at puberty. Such re-vaccination would give to the community generally a well-grounded confidence in their protection, and so prevent constantly recurring panics about small-pox. To the individual it assures protection to such an extent, that it seems to prevent the occurrence of small-pox, more than even an attack of small-pox itself prevents the re-occurrence of that disease.” P. 127.

The book is divided into three parts—the first devoted to topics relative to pathology, the second to methodical nosology and systematic medicine, and the third to the nature of diseases, special pathology and therapeutics. To the student the first part will be especially valuable, as it contains a very good chapter on *case-*

taking, and also one on the principles which guide the treatment of fever and of inflammation. We have merely to add that the *Outlines* have our cordial approval, and we can honestly recommend them as a guide to the diligent student in the medical and surgical wards of our hospitals.

Dr. Hartshorne's work has already been reviewed in our pages,* and it is necessary now only to endorse the favourable opinions we then entertained as to its intrinsic merits. It opens with an interesting chapter on "Systems of Medicine." Part I., "Principles of Medicine," contains sections on General Pathology, Semeiology, General Therapeutics, and Nosology. Part II. is devoted to Special Pathology and Practice. The value of the book is enhanced by a collection of nearly three hundred formulæ, and by two copious indexes—one, of diseases and the suitable formulæ; the other, a general index. The illustrations are, in the main, good, although occasionally not sufficiently distinct or somewhat rough, and sometimes perhaps unnecessary. The important subject of Disinfection is disposed of in one page, which we take the liberty of re-producing, as a specimen of the sterling worth of the volume.

"DISINFECTANTS.

"The best preventives of infection are *ventilation* and *cleanliness*. No agencies can be made to take the place of these. The following are the most available temporary aids in purification of insalubrious places.

"For disinfection of *privies*: *sulphate of iron*, a pound dissolved in a gallon of water; or the same amount of *chloride of lime* may be thoroughly mixed in water. Burnet's Liquid consists of solution of *chloride of lime*, twenty-five grains in each fluid drachm of water. Of this a pint may be put into a gallon of water for use.

"For *water-closets*, *bed-pans*, &c., Labarraque's solution of *chlorinated soda* may be employed—a fluid ounce to a quart of water; or *permanganate of potassium*,^b ten grains to a quart of water; or carbolic acid, twenty grains to the pint or quart. *Coal tar* possesses the virtues of carbolic acid in a dilute form. Fluid carbolic acid may be used diluted with 50 to 100 parts of water; or the impure acid, a fluid ounce to a gallon of water. Common petroleum is not a bad disinfectant. Tar is a very good one.

* Dublin Quarterly Journal of Medical Science Vol. XLV., p. 131. 1868.

^b The *crude permanganate* is much cheaper than the crystallized, and will answer.

"*Drinking-water* may be disinfected by the addition (after filtration) of enough permanganate of potassium to render it just perceptibly pink in a strong light.

"*Articles of clothing*, contaminated by discharges, &c., from patients, if very bad, should be *burned*. Otherwise, they should be *boiled* thoroughly; or at least, plunged into boiling water. Solution of permanganate of potassium (an ounce to three gallons of water) is sometimes used. Woollens and all clothing which cannot be washed, as well as bedding, should be exposed for several hours to a *dry heat* of from 200° to 250° Fahrenheit.

"*Occupied rooms and houses* may be disinfected (besides ventilation) by diffusing in spray through the air Ledoyen's liquid (solution) of *nitrate of lead*, made by dissolving one pound of litharge in seven ounces of nitric acid and two gallons of water. Or, by placing in shallow vessels the solid *chloride of lime* (bleaching salt). Or, sprinkling a solution of carbolic acid, 1 part in 100 of water. Fresh whitewashing is beneficial to the air of a cellar. *Charcoal* and *quicklime* are absorbent (especially the former) of gases, and thus aid in purifying the air. They may be combined, as in what is called '*calx powder*.'

"*Hospital wards* may be disinfected (besides ventilation and cleansing) by Ledoyen's liquid, chloride of lime, *bromine* left exposed to the air in shallow vessels, or *iodine*, heated moderately.

"*Heaps of filth*, solid or semi-liquid, may be covered with charcoal, two or three inches deep, or with *dry earth*. *Drains, ditches, and sewers* may be disinfected with sulphate of iron, coal tar, chloride of lime, &c. A pound of good chloride of lime will suffice for a thousand gallons of running sewage.

"*Bromo-chloralum* is a new disinfectant, not yet thoroughly tried.

"On the subject of *ozone* as a disinfectant, the reader is referred to works on chemistry and hygiene." P. 523.

Clinical Medicine: Lectures and Essays. By BALTHAZAR FOSTER, M.D.; Fellow of the Royal College of Physicians; Professor of Medicine in Queen's College, Birmingham, &c., &c. London: J. & A. Churchill. 1874. 8vo, pp. 364.

THIS volume consists of a series of lectures and essays which have already appeared in the medical journals, and to which the author's larger experience and more lengthened study have enabled him to make some important additions.

The first paper is on the treatment of gastric ulcer. The author insists with great force on the superlative value of *complete* rest in the treatment of ulcer of the stomach. He recommends us to

nourish patients suffering from this disease exclusively by the rectum, for eight or ten days. He usually administers four or five enemata in the twenty-four hours. Before commencing these he has the rectum well washed out. In ordinary cases he uses strong unsalted beef-tea, or milk with yolk of egg, and never gives more than four to six ounces for each injection. To insure its retention, as well as to obtain the soothing and supporting effects of opium, he adds to each from ten to twenty minims of tincture of opium. Better even than beef-tea or egg is the nutritive compound recommended by Leube, a full account of which was given in Dr. Cuming's "Report on Medicine" in this Journal (November, 1872). It consists of very finely chopped meat, to which one third of its weight of finely minced pancreas (of the pig or ox) has been added. The mixture is then treated in a mortar with lukewarm water, and reduced to a thick soup. When the lower end of the rectum tolerates such enemata badly, Dr. Foster administers larger injections by the long tube, but then he gives one only twice daily. By the mouth he gives only pieces of ice, sips of iced water, or very small quantities of milk and lime water. Such treatment, combined as it must be with rest in bed, he has found to cure gastric ulcer in three or four weeks. The stomach must, however, be exposed to the irritation of ordinary diet afterwards with extreme caution. First a little arrow-root is added to the milk, and by degrees a little fish, and then a small quantity of fowl is allowed. Similar treatment, by complete rest of the stomach, he has known successful in desperate cases of vomiting connected with pregnancy. A short perseverance in this management usually gives such relief to the pain and other symptoms of gastric ulcer as to render the administration of drugs unnecessary. Opium and bismuth are those which he finds most serviceable, and in cases in which hematemesis occurs, he recommends fifteen grains of gallic acid, with fifteen minims of tincture of opium, every second or third hour.

The second essay, on "Cyanosis from Patent Foramen Ovale," is a reprint of one which appeared in this Journal in 1863.

The third is on the use of ether as a remedy for the dyspepsia of phthisis, and a means of promoting the digestion of fatty matters in that disease—a subject with which Dr. Foster's name must always be honourably associated.

The fourth lecture, on "The use of Digitalis in Disease of the Heart," is one of the most practically useful in the volume. Against the indiscriminate employment of this powerful drug in heart

disease, Dr. Foster protests. On its great value, when judiciously prescribed, he as strongly insists. In his own practice he generally uses the infusion, and its effect upon the secretion of urine he believes to be the most reliable criterion of its efficacy. So long as it keeps the urine abundant it is doing good. When it fails to do this, he believes we seldom obtain good from its employment—not that, in his opinion, the good is done by the freer secretion of urine, but because if digitalis fail to produce that adjustment of the arterial and venous sides of the circulation in consequence of which free secretion of urine occurs, it is doing no good, since it is adjustment of this disturbed circulation which the system needs.

Though valvular lesions are very frequently double, still at the bedside we usually find that the symptoms which threaten life are connected with the wrong action of one rather than of the other valve, and the author rightly insists on the importance of a clear perception of the manner in which each form of valvular disease does harm. If we keep this before us, and remember the effects of digitalis on the heart, we are in a position to prescribe it judiciously. In *insufficiency of the aortic valve*, the harm is done during the diastole of the ventricle. The longer the duration of the diastole the greater is the amount of blood which must fall back into the ventricle from the aorta. Digitalis, when it slows the heart, prolongs the period of diastole, hence in the majority of cases of aortic regurgitation, digitalis only does harm. "There is one condition," however, Dr. Foster says, "which warrants its use—that of over-compensation. This is marked by violent action of the heart, bounding vibratory arteries visible all over the body, almost constant headache, flushed face, noises in the ear, occasional epistaxis, urine normal in quantity and free from albumen, &c. In these cases a few doses will do good. The action must, however, be watched, and the moment the pulse falls the remedy must be stopped; if not, syncope and other alarming symptoms occur." In *narrowing of the mitral orifice* the condition of affairs is the very reverse of that which exists in aortic insufficiency. Here the longer the period of diastole the better, for during prolonged diastole the auricle behind the narrowed orifice has time to empty itself, and the ventricle receives before it contracts a full charge of blood. Hence, in narrowed mitral orifice, digitalis is specially useful.

In *insufficiency of the mitral valve* its effect is also sometimes magical. Here it acts by giving increased regularity and firmness

to the cardiac muscle, and so producing more perfect approximation of the segments of the valve, and a more complete closure of the orifice, and "the feeble flickering pulse, the congested lungs, the dropsical limbs, the swollen jugular veins and cyanosed lips and face all improve under its use." In pure *aortic obstruction* it does no good.

The remaining papers are on Rupture of the Aortic Valves from Accident, on the Synthesis of Acute Rheumatism, on Duchenne's Paralysis, on Diabetes Mellitus, on the Use of the Sphygmograph and Cardiograph in the Study of Diseases of the Heart and Great Vessels, and on a Case in which Embolism followed Thoracentesis by Aspiration. We would gladly, if space permitted, present our readers with a summary of some of these, more particularly of the admirable one on Diabetes and its Treatment. We shall probably draw attention to them on a future occasion. In the meantime we thank Dr. Foster for presenting us with these most valuable records of careful clinical observation. They prove him to be a truly scientific, and, at the same time, a thoroughly practical physician.

The Science and Art of Nursing the Sick. By ENÆAS MUNRO, M.D.; Fellow of the Faculty of Physicians and Surgeons, &c. 8vo, pp. 331. Glasgow: James Maclehose. 1873.

DR. MUNRO has laid himself open to a good deal of criticism. He might have said all he has to say in half the space, and have conveyed his ideas more forcibly. A disquisition on the chemistry of food and on the process of digestion, and a table of the amount of carboniferous and nitrogenous nutriment in various dietetic articles, are quite out of place in a book on Nursing the Sick. Having, however, said so much in disparagement, we have something to say in praise of the volume. Such a work was needed. Too many students of medicine enter into practice with a very exaggerated idea of the importance of prescriptions, and a very inadequate idea of the value of nursing. In course of time those of them who have any real aptitude for the practice of their profession acquire a knowledge of the nursing and feeding of the sick, but they do so at the expense of their patients, and often, and not unjustly, at the cost of their own reputation. Nothing is so likely to damage a young practitioner as giving directions as to the management of his patient, the injudiciousness of which is apparent to the experienced

matron of the household; and young men—if we except those who have had the advantage of residence in an hospital, and have there thoroughly occupied themselves in their duties—cannot have any practical acquaintance with those homely, but important, matters, on which the recovery of the patient often depends. Dr. Munro's book is one from which the young practitioner may derive much information which will promote his success in life and his success in curing his patients. Not the least valuable part of the volume is that which deals with the dietary of the sick. To this is appended a number of excellent receipts (more varied than those contained in any other medical work with which we are acquainted), from which even an experienced hand may get a useful hint. Here is one which we have not seen elsewhere, and which we have tried. It is not nice enough for a very fastidious palate, but quite sufficiently so for most people, and very convenient:—

“MIXED SOUP—*Readily Made.*

“*Ingredients.*—Two-thirds breakfast-cupful of fresh milk, two-thirds teaspoonful of Liebig's extract of meat, and one tablespoonful of flour.

“*Mode.*—Bring the milk to the boil in a pan, and then dissolve the extract of meat in the milk; thereafter, while continuing to stir, drop the flour into the mixture very gradually, in order to prevent the formation of small knots. Some curry powder, pepper, or other condiment, may be added to taste. The mixture should be of the consistence of white or pea soup.

“This soup can be very readily prepared, is very nourishing—being made up of animal and farinaceous preparations—and may be taken once daily, when soup is indicated, for a couple of weeks or so at a time, or oftener, in fevers especially. Simple stock, or other animal soup, may be substituted for the milk, and then less, or none, of Liebig's extract will be required, if these latter do not agree.”

Autobiographical Recollections of the Medical Profession. By J. F. CLARKE, M.R.C.S., &c.; for many years on the Editorial Staff of *The Lancet*. London: J. & A. Churchill. 1874. 8vo, pp. 537.

THE papers comprised in this volume first appeared in *The Medical Times and Gazette*, and have been reprinted, as the author tells us, at the request of numerous friends. They relate almost exclusively

to the changes which have taken place in the medical profession in England since 1823, and to the men who bore a conspicuous part in resisting or promoting those changes. They are written in an easy, gossiping style, and contain brief, but often graphic, descriptions of nearly all the physicians and surgeons who have attained to great positions in London during the last fifty years. The volume will be found a delightful one by our older readers—one which they will feel unwilling to lay down; and may be read, not only with delight, but with instruction, by the younger men among us. They will there gain a knowledge of the qualities which deserve success, of the qualities which secure success, and of the qualities which prevent success. No medical library should be without Mr. Clarke's volume.

An Epitome of Therapeutics; being a Comprehensive Summary of the Treatment of Disease, as recommended by the leading British, American, and Continental Physicians. By W. DOMETT STONE, M.D., F.R.C.S.; Honorary Member of the College of Physicians of Sweden; Physician to the Westminster General Dispensary; Editor of the "Half-yearly Abstract of the Medical Sciences." London: Smith, Elder, & Co. 1874. 8vo, pp. 359.

IN the work before us, Dr. Stone quotes, with more or less condensation, the directions as to the treatment of the various diseases which come under the care of the physician, given by the principal systematic writers on the practice of medicine—Sir Thomas Watson, Dr. Aitken, and Dr. Tanner, of British authors; and Dr. Flint and Dr. Hartshorne, among Americans, are those whom he chiefly quotes. In many cases, however, he refers to authors of admitted value on special subjects, such as Murchison on Fever, Hammond on Nervous Affections, and Wilson on Diseases of the Skin; and not infrequently to writers in the medical journals of more doubtful authority.

The work of selection and condensation is satisfactorily performed, and the volume is as likely to be useful as one of the kind could be; but the utility of such a work must be limited, for of all the maxims of our art, none is more true than that which asserts that the physician should prescribe, not for the disease, but for the patient. Every case has its own peculiarities, and the judicious

practitioner is he who, when he finds himself at the bedside of a sufferer seriously ill, takes into consideration the state of every function before he ventures to prescribe. In the majority of cases of the same disease, however, a somewhat similar line of treatment is, with more or less variation in one direction or another, indicated, and although we have long since abandoned the search for specifics, it has so happened that of late years the real efficacy of certain medicines in particular maladies has been established. We need only cite the utility of bromide of potassium in most cases of epilepsy, the power of quinine in most cases of intermittent fever, of tincture of perchloride of iron in most cases of idiopathic erysipelas, and of iron in most cases of anæmia; yet even in cases of these diseases how different is the success of the physician who, having satisfied himself that he has to deal with one of them, blindly prescribes the indicated drug, and he who, considering all the ways in which the patient's system is disordered, gives with the special medicine full directions as to the habits and *regimen* of the patient, and other therapeutic agents to meet the circumstances of the individual case. Such being the conditions necessary for judicious treatment, it is evident that a work on the model of Dr. Stone's can have only a limited utility; it is like a friend with whom we may discuss the general question, and whose hints we may bear in mind when we proceed to prescribe in the particular case. Used in this way—to refresh the memory and aid us with suggestions—it will prove a valuable addition to the busy practitioner's library.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

Wednesday, December 9th, 1874.

WILLIAM MOORE, M.D., in the Chair.

[DR. FITZGERALD made a communication in reference to the *post-mortem* appearances in a case of cerebral tumour, which was diagnosed during life by means of the ophthalmoscope (Vide *Dublin Medical Journal*, June, 1874. Vol. LVII., p. 538). His paper, and the discussion upon it, are held over, awaiting a report on the histological character of the tumour.]

Notes on the Probable Employment of Anæsthetics in Ancient Times, especially in Scotland and Ireland. By THOMAS MORE MADDEN, M.D., M.R.I.A.; lately Examiner in Midwifery in the Queen's University; Physician to St. Joseph's Hospital for Children; Ex-Assistant Physician, Rotundo Lying-in Hospital; Corresponding Fellow of the Obstetrical Society of Edinburgh and of the Gynæcological Society of Boston, &c.

THERE can be no subject of higher literary importance to medical men than the history of those discoveries which have tended materially to the alleviation of human suffering or the prolongation of life. The number of medico-historical investigations brought before the Society is, however, very small when compared with what are generally regarded as more practical contributions; and, therefore, when I was honoured with a request to read a paper here to-night, I recollected that several years ago I had taken notes from various authors, not often consulted now-a-days, on some of the earliest efforts to ensure insensibility to pain by anæsthetic agents; and, notwithstanding my present inability, from lack of time, to revise or amplify these crude memoranda, so as to render them more worthy of the acceptance of this Society, I thought that the interest of the subject itself might, perhaps, secure your kind indulgence for the imperfect way in which I must treat it. Some of the following citations

have been already advanced by other writers, but several of them have not, I believe, been previously quoted.

Researches into the history of modern improvements in medico-chirurgical art generally bear out the observation of the inspired writer, that "all novelty is but oblivion;" and every day we find new proof of this in the revival of ancient arts, under an improved form, as modern discoveries. For, as Lord Bacon well expressed it, "the River of Lethe runneth as well over as under ground," and certain it is that the student of the now-neglected works of the ancient medical writers will find many striking coincidences between so-called recent inventions and the long-forgotten ideas of our predecessors.

This topic is one which I have elsewhere discussed, and have shown that many of our modern surgical appliances, particularly those used in obstetric and gynecological practice—the midwifery forceps, the vaginal speculum, the uterine sound and porte caustique, and the employment of sponge tents and nitric acid in uterine diseases (on the supposed invention or application of the four latter of which, in our own time, some have risen into reputation and fortune)—were all long ago well known, but in the course of time had fallen into that desuetude and oblivion which will as surely one day overtake our boasted inventions, and from which they may in due course be again resuscitated and claimed by future discoverers.

Some time ago a distinguished Celtic scholar, Mr. Wm. Hennessy, was good enough to call my attention to the subjoined passage, which occurs in Jocelyn's life of St. Mungo, patron of Glasgow, a work written in the 12th century, between the years 1175 and 1199:—

"In Pinkerton's edition of the Life of Kentighern, or St. Mungo, Patron of Glasgow, p. 200 (see *Vitæ Sanctorum Scotiæ*, p. 191), the following statement is found, viz. :—

"*Constat nihilominus nobis multos, sumpto potu oblivionis quem Physici letargion vocant, obdormire; et in membris incisionem, et aliquoties adustionem et in vitalibus abrasionem perpassos, minime sensisse et post somni excusionem; quæ erga sese acutata fuerant ignorasse.*"

This Life, which is edited from a unique MS. in the British Museum, Cott. Vit. c. VIII., 12th century, was written by the celebrated Jocelyn of Furness, the biographer of St. Patrick, and is dedicated to another Jocelyn, Bishop of Glasgow.

The composition of the "*potu oblivionis*" just referred to under the name of "*letargion*" is unfortunately not specified by the ancient biographer. But I think that we have good reason for believing that its essential component was the juice of the mandragora officinalis, a long-disused acro-narcotic poison belonging to the nightshade or solanaceæ tribe. It is certain that to some plant named mandragora (*μανδραγόρας*)—whether it was the mandrake, or, as Dr. Adams supposes it to have been,

the atropa belladonna—many of the ancient writers agree in attributing narcotic properties similar to those which the haliographer assigns to his “letargion.” Thus Celsus, in the very words used by an Irish writer I am about to cite, says that its apples, if placed under the patient’s pillow, produce sleep; and in the same chapter he describes another species of mandragora which was administered before the performance of surgical operations to produce insensibility to pain.*

In the library of the Royal Irish Academy there exists an extensive collection of ancient Irish medical manuscripts. These parchments contain much matter of the highest interest bearing on the hitherto neglected history of medicine in this country.

Several years ago I had occasion to consult these documents, and through the kindness of two eminent Celtic scholars I was enabled to avail myself of their unpublished translations of some of the most interesting of these. In this way, with the assistance of a well-known Irish scribe, Mr. O’Longan, of the Royal Irish Academy, I made a very extensive compilation of materials for an essay on this subject, which, although completed long since, still remains unpublished. One of these manuscripts is a Celtic materia medica of the twelfth century, and in this parchment the following account of the mandrake occurs:—

“Mandragora, i.e., the roots of an herb, and its degree is not given by the authors. There are two species of it—a male kind and a female kind; and it is said it is under the gallows it is found, and that from the drops that fall down from them on the earth are created a human form; and it is the root that resembles man. To preserve its rind, and it retains its virtue one year. To put it under the head of the patient, and it excites sleep. To mix the roots of this herb in wine to drink, and it reduces the inflammation. And this herb has many other virtues.”

If we compare Pliny’s account of this plant with the ancient Irish writers just quoted, we must see that the latter had merely condensed the description left by the former. “There are,” says Pliny, “two varieties of the white Mandragora which is generally thought to be the male plant, and the black, which is considered to be the female. . . . Persons about to gather this plant,” continues the Roman naturalist, “take every precaution not to have the wind blowing in their faces; and after tracing three circles round it with a sword, turn towards the west, and dig it up. The juice is extracted both from the fruit and from the stalk, the top being first removed; also from the root, which is punctured for the purpose, or else a decoction is made of it. The filaments, too, of the root, are made use of, and it is sometimes cut up into segments and kept in wine. . . . Administered in cases, proportioned to the strength of the patient, this juice has a narcotic effect; a middling dose being one cyathus. It is given, too, for injuries

* Celsus. Lib. iii. 18.

inflicted by serpents, and before incisions or punctures are made in the body, in order to insure insensibility to the pain. Indeed for this last purpose, with some persons, the odour is quite sufficient to insure sleep." The latter words are surely remarkable:—*Bibitur et contra serpentis et ante sectiones punctionesque ne sentiantur; ob haec satis est aliquis somnum odore quasisse.**

Now, is it probable that the Irish physician, who in this manuscript repeatedly quotes from Pliny's Natural History, should have thus condensed his account of the Mandragora without lighting on the remarkable passage I have just cited? Or is it even possible that surgical anæsthesia should have been then practised in Scotland, and at the same time have been unknown in Ireland, notwithstanding the close proximity and intercourse of these nations? The fact that there is no distinct reference to this practice in the work now under consideration is no argument that it was unknown. For we know that these manuscripts were regarded only as a portion of the medical learning of the ancient Irish; and that, as among all other primitive people, more dependence was placed on oral tradition than on written documents, and that the old Celtic physician was wont to guard his most important secrets as the alchemist did his discoveries, until the moment arrived when, taking leave of the world and his practice together, he committed the charge of it to his successor, who was almost invariably his eldest son—as the office of a physician was a hereditary dignity confined to certain families—and he in like manner transmitted it to another generation. In this way we may readily suppose that if surgical anæsthesia was known in Scotland, and if the means by which it was produced, and the writings in which it was treated of, were known to the native Irish physicians at the same time, both of which I have already proved, the same practice was very probably known to our ancestors in the healing art, although not described in their manuscripts.

Nor is Pliny the only writer who speaks of the anæsthetic properties of mandragora. Isidorus, another authority often quoted by the author of the ancient Irish manuscript referred to, speaking of mandragora, says:—"Cujus cortex, vino mixtus, ad bibendum iis datur quorum corpus propter curam secandum est, ut soporati dolorem non sentiant" (c. 333). The late Dr. Snow (in his work "On Chloroform and other Anæsthetics," p. 2; London, 1858) quotes Apuleius, who speaks thus of mandragora:—"Further, if any one is to have a limb mutilated, burnt, or sawn, he may drink half an ounce with wine, and whilst he sleeps the member may be cut off without any pain or sense" (*De Herbarum Virtutibus*, cap. 131). I may, however, observe that in the earliest version of the "Herbarium" of Apuleius with which I am acquainted,

* C. Plini secundi Naturalis Historiæ. Lib. XXV., sect. 94, Ed. Gothæ, 1855, Vol. IV., p. 150.

namely, the Saxon copy published by direction of the late Master of the Rolls, and the original transcript of which was probably made about the year 1050, the passage cited by Dr. Snow does not occur.^a

In the 7th volume of Notes and Queries (2nd series, p. 129, 1859) the following passage on the subject is cited by "S. B.," from Dr. William Turner's "Herball," published in 1551, in which mention is made of a wine:—"Of the roots of the mandrake to be given to persons who had to be cut, seared, or burned, and they shall feel no pain, but they shall fall into forgetfulness and sleepy drowsiness. The apples, if a man smell of them, will make him sleep, and also if they be eaten."

Mesmerism, which has been long used as an anæsthetic agent of great power in India, where Dr. Esdaile, some time Presidency Surgeon at Calcutta, performed no less than 261 operations under its influence,^b was introduced with less success into England, as a novelty, about forty years ago, by Dr. Elliotson. It seems to have been utterly forgotten, however, that animal magnetism, or mesmerism, had of old been a well-known practice in Ireland, and has been fully described by my father, Dr. R. R. Madden, in a paper published twenty years ago, and to his essay I would refer any one interested in this question.^c I may mention, however, that in Dr. R. R. Madden's paper a remarkable account may be found of a ceremony practiced by the Pagan Irish as far back as the year 50 A.D., which appears to have been almost identical with that now employed by animal magnetists, for the purpose of throwing their patients into the mesmeric trance.

In Middleton's tragedy of "Women, Beware of Women," written in the middle of the seventeenth century, we find the following mention of surgical anæsthesia as a familiar idea:—

Hippolito.—"She shall never know till it be acted,
And when she wakes to honour then she'll thank me for it.
I'll imitate the pities of old surgeons
To this lost limb, who, ere they show their art,
Cast one asleep, then cut the diseased part."^d

Sprengel, in his "History of Medicine," published long before surgical anæsthesia was a recognised fact, in speaking of operations, quotes

^a "Saxon Leechdoms," published by direction of the Master of the Rolls. Vol. I., 1864.

^b Dr. Esdaile, "The Introduction of Mesmerism as an Anæsthetic and Curative Agent into the Hospitals of India." Perth, 1852.

^c Dr. R. R. Madden, "Some Notices of the Irish Mesmerists of the Seventeenth Century." Dublin Quarterly Journal of Medical Science, August, 1847. Pp. 254-272.

^d Middleton, "Women, Beware of Women," Act iv., scene 1; London, 1657. See also Notes and Queries, 2nd series. Vol. I. (May, 1856), p. 351. See also Notes and Queries. Vol. VI., p. 470, and Vol. VII., p. 127.

Théodoric, who advised the administration of opium and hyoscyamus before operations, for the purpose of throwing the person to be operated upon into a state of unconsciousness, from which, after the operation, he aroused them by giving vinegar and fennel.*

In 1784 M. Lassard, Surgeon to the "Charité" Hospital of Paris, recommends a narcotic before surgical operations; and Dr. Chapman cites the case of Augustus, King of Poland, which was published in 1782, and in which it was stated that the King was "surreptitiously narcotised by his surgeon, Weiss, while a part of a limb which had mortified after being wounded was cut off, without pain or consciousness."† About the same time Mr. Moore, House-Surgeon to George's Hospital, suggested the compression of the principal nervous trunks leading to the part about to be operated on previously to the operation, with the view of lessening the pain. John Hunter himself once removed a leg, the nervous trunk of which was thus compressed. Many years subsequently it was observed that the peasantry in Brittany resorted to pressure as an anæsthetic, and, imitating this practice, Dr. Leigard, of Caen, in 1844, stated that he had twice painlessly performed an operation on the toe-nail, which is generally a most painful one, when the nerves leading to the part were thus compressed.

It would be easy to multiply such citations, which appear to me to establish, beyond a doubt, the fact that surgical anæsthesia is not a new idea, and that, although chloroform and ether were unknown until our own time, yet other means have been used to produce a similar effect from a very early period in the history of medicine. That the means of obtaining at will freedom from pain, if ever known, could be forgotten, appears inexplicable, and yet that this secret was so lost that the very idea, until comparatively recently, appeared a mere chimera, is certain. A great surgeon, not long dead, only forty years ago wrote thus:—"Eviter la douleur dans les incisions est un chimère que ne poursuit plus personne. Instrument tranchant et douleur, en médecine opératoire, sont deux mots qui ne se présenteront jamais l'un sans l'autre à l'esprit du malade, et dont il faut pour toujours adopter l'association. Les efforts du chirurgien soient se restreindre à rendre la douleur des incisions le moins vive possible, sans nuire à la sûreté des opérations."‡

It would be beyond the scope of this paper to enter into the still pending discussion of the comparative safety and advantage of the various anæsthetics, especially chloroform and ether, now used, or even to refer particularly to the history of the successive steps in the history of modern anæsthesia, dating from the time that Sir Humphry Davy

* Théodoric, Chirurg., lib. iii., c. 10, f. 161 c., ap. Sprengel, Histoire de la Médecine Traduit de l'Allemand, par Jourdan. Vol. VII. P. 313. Paris, 1815.

† Dr. Chapman, in Westminster Review, January, 1859. P. 102.

‡ Velpeau.—Nouveaux Eléments de Médecine Opératoire. P. 10. Bruxelles, 1832.

first threw out the suggestion (in the year 1800) that—"As nitrous oxide seems capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place;" until, in 1846, sulphuric ether was first employed in a capital operation in this country by Mr. Liston; and the following year Mr. Jacob Bell and Sir James Simpson established the efficacy of chloroform, and thus effectually accomplished that great object of relieving pain at will, which the ancient physicians of every land had, as we have just seen, sought to obtain by less efficacious and ruder means.

DR. MACSWINEY said that although no member might be disposed to discuss the paper just read, he thought the Society should express its obligation to Dr. Madden for the learning and research which he had displayed in the investigation of the subject.

DR. HENRY KENNEDY reminded the meeting that in the play of *Romeo and Juliet* mention was made of an agent which was capable of producing the appearance of death without causing death itself—showing that the use of, or the belief in, the existence of such a drug was as old as the times of Shakspeare.

DR. M'CLINTOCK said the paper was one that manifestly admitted of no discussion—there was nothing practical in it; but at the same time he was much interested by it, and he thought they would all be glad if papers of that kind were occasionally brought forward at their meetings, as they would tend to diversify, enliven, and enrich their records, and would be of interest to all of them in throwing light on the state of medicine in our own country at an early period. He agreed with Dr. MacSwiney that Dr. Madden had given an earnest of his great industry and capacity for investigating subjects of this nature; and as he had said he had been engaged in examining some ancient records of Irish medicine preserved in the Royal Irish Academy, it was to be hoped he would continue to prosecute his researches, and ultimately place the results before the Medical Society. A good many years ago Sir Philip Crampton delivered an address on the history of early Irish medicine, but he did not seem to be aware that there was so rich a mine of material bearing on the subject so near at hand in the Royal Irish Academy.

The CHAIRMAN said the Society was much indebted to Dr. Madden, and hoped he would from time to time bring other papers of the same kind before them.

On the Difference of the Respiratory Murmur in the Two Lungs. By HENRY KENNEDY, A.B., M.B., V.P.C.P.I.; Physician to the Whitworth Hospital, Drumcondra; formerly connected with the Cork-street and Sir Patrick Dun's Hospitals.

IN the following paper I would make a few remarks on the respiration of the healthy lungs. The point of which I am about to speak engaged a good deal of my attention several years since. At that time, however, I lost sight of the subject; and, what was of more consequence to myself, lost or mislaid most of the notes which had cost me a considerable time to tabulate and bring together. The point, however, has again come under my notice, and I have thought well of bringing it before the Association, even though it has lost much of the value which might have been given it by the addition of what was mislaid. What I am about to speak of is the question, whether there is any and what difference in the normal respiration of the two lungs. Two special reasons have induced me to take up this point; first, because it has a most important bearing on the diagnosis of some diseases of the lungs; and, secondly, because I have a strong desire to give honour where the honour is due. So far back as the year 1837—that is, when the very able work of Dr. Stokes on the lungs and windpipe appeared—I read the statement that the respiration was stronger in one lung than the other; and that, with scarcely an exception, that lung was the left. On a point of this kind it may be well to quote the very words:—"I have found," says Stokes, "that in many individuals there is a natural difference between the intensity of the murmur in either lung, and in such cases, with scarcely an exception, the murmur of the left is distinctly louder than that of the right lung. This character is particularly evident in females and nervous individuals, and has not been noticed by Laennec. It is of the greatest importance (he goes on to say) to bear it in mind, as we may thus be often relieved from the anxiety which such a discovery might produce." Now, it is "passing strange" that an observation of such a character should have been overlooked, I may say, entirely. I believe I have looked over almost all the English works on diseases of the chest which have recently appeared, and not one of them notices the observation. Yet the author not only gives the extract already quoted, but goes on to show its value and direct bearing on the diagnosis of phthisis. I must repeat that the oversight of this important observation seems very remarkable. It is but right to notice here that in one work—that by Flint, which appeared in the year 1866—the fact is, in a way, mentioned. But he does so in the very briefest way, and not as bearing directly on diagnosis, nor making any allusion to the original observation of Stokes, made 30 years before; and Flint's

name, too, may be specially mentioned, because all through his works he has allowed very few English authors and their writings to escape his notice.

But some one may ask here—Is the observation a correct one? Is it true that in the majority of instances the respiration of the left is stronger than that of the right lung? It would be bold to say it is so. But I may safely say I believe it to be so. It is true there is a kind of negative evidence against the fact, inasmuch as most of the leading authorities do not notice it, whence it might be inferred that it did not exist. Four of them, indeed, go farther, and state what I believe is wrong—viz., that the respiratory murmur is often weaker on the left side. But it must be repeated, that two-thirds, at least, of the works are entirely silent on the point. In the latest edition of Walshe, which appeared in 1871, he states that he has altered the views put forward in former years, and that he now believes that the respiratory murmur is sometimes stronger in the left than in the right lung. But so far as I can make out, he gives no importance to the fact; that is, no deductions are made from it, nor is the name of Stokes mentioned. It may be well to remind you here, and probably, indeed, you are all aware of it, that in all the leading works any marked difference between the two lungs is given, if I may so say, to the right, in which it is very generally—indeed, I may say universally—allowed that the character of the breathing is more bronchial on the right than the left side. But this is a character, we know, which affects the pitch and not the intensity of the sound, and about which it is scarcely possible to make a mistake. It is only necessary, then, to keep in mind that, in what follows, I am speaking of the healthy respiration or vesicular murmur, and of it alone.

To return, then, to the question—Is it a fact that this murmur is often stronger on the left side than the right? I believe it is; and ever since I read Stokes' work I have kept it in mind, and it has often and often served me in the way of diagnosis. For I have been asked several times to examine parties in whom the difference was so marked as to lead the ordinary medical attendant to fear some mischief existed; and I need scarcely add that in cases presenting themselves for insurance, where sound health is everything, a knowledge of this kind must be of the utmost importance, as indeed it has proved to myself.

But it may be well now to consider more closely the nature of the evidence which can be advanced in favour of the fact. Nor can I do better than begin with the author himself; though, indeed, before an audience such as I now have the honour of addressing, I feel this is a work of supererogation. For others, however, it is different; and it is necessary to state that Dr. Stokes was Physician to the Meath Hospital for twenty years before his work appeared, and during this

period it was well known he was devoting himself chiefly to the study and improvement of auscultation. Hence, when the work was published and I read the sentence already given, I knew the statement was not that of a beginner, but of one who had spent much time on the subject; and I accepted it accordingly as a fact; and, as already stated, have had no reason whatever to question its accuracy—I mean in the great majority of instances.

In the second place, Flint's name may be mentioned in connexion with the point under discussion. This author states, in the work which appeared in 1866, that he closely examined some twenty-four healthy persons, and in them he found, and somewhat to his surprise, that in the great majority the vesicular murmur was loudest in the left apex. There he leaves the matter, and, as was stated before, not seeming to be aware of the observation of Stokes, published so long previously. The views of Walshe, I have already stated, have changed lately from what they were in former years; and in his latest work, in 1871, it is mentioned that the vesicular murmur is sometimes loudest on the left side. But he clearly does not consider the point as of any moment; nor is the name of Stokes mentioned.

At the risk of being accused of repetition, I have thus gone twice over all the evidence I have been able to make out bearing on this point. And now as to my own observation. It has been already mentioned that from the first reading of what was stated by Stokes I never lost sight of the point, and I continued to observe upon it as occasion offered; and finally, several years later, I set about investigating the question in a methodical way; and after spending considerable time and labour on it, I succeeded in tabulating upwards of 300 cases.* Most unfortunately, when I recently came to look for these tables, I found that two-thirds were missing; and so, what I would now advance is not at all as complete as it would otherwise have been. This much, however, I feel may be safely stated, that the results of the larger number lost only confirmed the results of the smaller number brought before you this evening. The number I can now speak of just amounts to 99, which were made up in the following way:—

Total number of cases,	. 99
Vesicular murmur stronger on the right side,	6
Vesicular murmur equal on both sides,	. 14
Vesicular murmur stronger on the left side,	79

Of these last there were 20 which had a plus mark—that is, the murmur was very decidedly louder on the left side. These numbers may, I think, be taken as a close approximation to the truth. Every

* I take this opportunity of returning my thanks to Dr. Shannon for affording me opportunities of following out this investigation at the South Union Workhouse.

care was used to render the observations accurate. The upper part of the chest was uncovered, and the respiration listened to in both the natural and forced state. About two-thirds of the 100 cases were females, under the age of twenty-five, and the rest males, varying from boyhood up to 50 years old.

If it be confirmed that the fact is as stated—and I wish to put it forward as not being absolutely established—it naturally gives rise to the question, what is its cause? How is it that there should be any such difference between the two lungs? In attempting to answer the question it seems to me that possibly the natural difference between the two lungs might explain it. We know the right lung is at least two ounces heavier than the left; and with the nervous supply equal on both sides, it does not appear to my mind unnatural to suppose that the greater nervous supply would cause an increase in the intensity of the respiratory murmur; that the lungs are directly affected by nervous influence I cannot doubt. In the state known as cerebral breathing, described by the late Dr. Graves, on applying the stethoscope to the chest I often observed that the breathing was almost puerile; the lungs, in fact, had taken alarm, as I might express it, at the critical state in which the system then was. It may be observed, in passing, that the strong breathing is, in a prognostic point of view, of much practical importance to recognise.

In bringing the question before you this evening, I feel that full justice has not been done it—certainly not what I could have wished. And yet possibly enough has been advanced to direct more attention to it than it seems to have received. It is certain that it is not generally recognised. For if it were, a statement of the kind coming from such an authority as Stokes, must have been reviewed, and its accuracy ascertained. This, however, has not been done, and it appears a fair inference that this was because the statement was not known.

Of the value of the sign—if it be assumed as true—I need scarcely repeat that it must form an important element in the diagnosis of the early stages of phthisis; and it would also have a direct bearing on the question which lung is the first attacked. Most authorities, I believe, give it in favour of the left, but this point had better be left, for the present, "*sub judice*."

DR. DARBY said he had always regarded Dr. Stokes' doctrine as a perfectly settled point, so that he never thought of taking any notes on the subject. He believed there was a more intense vesicular murmur in the left lung than in the right, and this view was accepted by the profession at large.

DR. YEO said he had been in the habit of accepting the fact, which Dr. Kennedy had investigated with such care, as one not requiring any

great attention; and he had not been aware that this practical point was omitted in the text-books. He could not quite agree with Dr. Kennedy in the explanation he offered of the phenomenon, as he thought that but a very inexact idea of the amount of nerve force going to either lung could be formed from the relative size of the right and left vagi nerves compared with that of the corresponding lungs, for the distribution of these nerves was complicated and not at all confined to the lungs; nor did he believe that such an excessive nervous supply to the left lung—were it demonstrated—could be accepted as an explanation or proof of any corresponding excess in the intensity of the auscultatory phenomena of respiration on that side, for we do not at present know how much of these nerves has an inhibitory influence, which would tend to lessen the respiratory intensity. However complex the function of the pneumogastric nerves may be, the effect they produce on the respiratory movements is carried out by the motor-spinal nerves, and must be—at least in the normal condition—bilaterally symmetrical, and therefore must cause respiration which is equal in intensity in the corresponding part of each lung. He thought the difference in the loudness of the respiratory murmur on the two sides was capable of a much more simple explanation—namely, the difference in the development of the muscular part of the thoracic wall on the two sides. Owing to the greater muscular development the right side of the thorax was usually found to measure considerably more than the left. This increased thickness of the thoracic wall reaches a maximum in the region employed by Dr. Kennedy's investigations, as just in the sub-clavicular the great pectoral muscle formed a non-conducting pad of considerable thickness. He did not gather from Dr. Kennedy that the same difference was found to exist in the axillary space, where the thoracic wall was but thinly covered by muscle; and certainly from personal experience he (Dr. Yeo) had been led to believe that there was no such distinction between the two sides in this region; and he had always ascribed the difference of the loudness of the respiratory murmur on the two sides, in certain regions, to the thickness of the muscular wall rather than to any undue nervous vigour enjoyed by either organ.

DR. HUGHES quite concurred in the accuracy of the statement which Dr. Kennedy had made with respect to Dr. Stokes. He thought the explanation given by Dr. Yeo was a reasonable one. In considering the question it was necessary to take into consideration the mode of respiration at the time of examination—namely, whether the individual expired forcibly or partially. A good deal would also depend on the examiner's freedom from any preconceived notion on the subject he investigated.

The CHAIRMAN said that, as a rule, in very spare females, the difference in the respiratory murmur on both sides did not strike one,

and he thought Dr. Yeo had put forward a very fair explanation. His own experience was that in females the murmur was most pronounced under the right clavicle, but the greater use of the right arm and right side would give rise to greater muscular development, and supply a rational explanation of the phenomenon.

DR. H. KENNEDY, in reply, said that two-thirds of the cases he had examined were young people, mostly females, varying in age from eight to twenty-two years, and it was scarcely possible that there should have been a greater development on the right side in these cases to account for the phenomenon on the principle suggested by Dr. Yeo. It was very unlikely that in a girl of eight, or over, any employment would make a sensible difference between the right side and the left; and inasmuch as nervous influence had a great effect, he thought it not unreasonable to attribute the difference to that cause. With respect to what had fallen from Dr. Hughes, he had only to say that he had taken every pains to make his observations accurate. He adopted every precaution to make the respiration natural, but he had also tested the matter by forced inspiration.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-SEVENTH ANNUAL SESSION.

Saturday, 12th December, 1874.

LOMBE ATTHILL, M.D., President, in the Chair.

Morbid Retention of the Dead Ovum. By ALFRED H. MCCLINTOCK, M.D.

As a general rule we find that when the embryo perishes in utero, its expulsion takes place soon afterwards—that is to say, within some hours or days. Indeed Lecieux and others have gone so far as to maintain that the womb will not tolerate its presence longer than from five to twenty days, but this undoubtedly is wrong. To the general rule above stated there are many exceptions, and they form a group of very troublesome, perplexing cases, severely testing the patience and diagnostic skill of the practitioner. Very often the patient had, at some time subsequently to conception, symptoms of miscarriage, and is under the impression that such actually did take place, though positive evidence in support of this is wanting. On other occasions, however, I have known a patient to assert, with great pertinacity, that she still carried the fruit of conception, notwithstanding that every symptom of pregnancy had ceased, and there was a strong presumption of her having aborted; yet the result proved her to be correct. Hence, I confess, I would not altogether shut my ears to the earnest representations of the patient on the point before us.

That a blighted ovum may be retained in the uterus for many months is a well established fact, and one that should never be forgotten. Dr. Granville, in his "Illustrations of Abortion," delineates an ovum, belonging to Sir Charles M. Clarke's collection, which was expelled at 4½ months of gestation, but yet the embryo had only the development, he says, of "scarcely more than a few weeks growth."

A lady who menstruated in the last week of July, began about the middle of August to exhibit unequivocal symptoms of pregnancy, which proceeded regularly till the middle of October, when indications of threatened abortion appeared, with pain, and the repeated expulsion of large coagula, and substances of various appearances. After this the previously existing symptoms of pregnancy entirely disappeared, and it was supposed that miscarriage had occurred, and that the ovum had

escaped unnoticed amidst the masses of coagula. The lady resumed her ordinary habits, and went into society as usual without experiencing any uneasiness or unhealthy symptom, except irregular uterine discharges, which were supposed to be menstrual. So matters proceeded until the 7th January (that is, five months from impregnation), when after a long drive she was seized with periodic pains, accompanied by smart uterine hæmorrhage, in consequence of which Dr. Montgomery (who relates the case) was sent for. He found the os uteri open, and an ovum partly protruded through it; this he succeeded in disengaging and bringing away. On examination it presented the general appearances as to size, form, and growth of the fœtus, of an ovum of less than two months. Cases of a like kind to this are recorded by Velpeau, Gooch, Matthews Duncan, and others—indeed every accoucheur in large practice must have met with examples. In the following case the ovum was retained for nearly seven months from the probable date of its vitality having been arrested. I saw the lady at Bray, in January, 1870, in consultation with Dr. Raverty, junior. She was the mother of four children, and considered herself to be eight months advanced in pregnancy. She had quickened at the usual time, she said, and thought she felt fœtal movements up to quite a recent period. For some months back she had been frequently troubled with slight sanguineous discharges from the vagina, which had been a cause of much alarm. At the time of my visit, and for some days previously, there was a bloody discharge, and she had a dry tongue, rapid pulse, occasional rigors, and other symptoms of a febrile kind. On examination I could not discover any symptom of pregnancy except this, that the abdomen was considerably enlarged, but it was everywhere resonant on percussion. On making a vaginal examination I found sticking in the os uteri a small ovum, which I was fortunate enough to detach and get away. It was about the bulk of a walnut, quite putrid, and contained an embryo the size of a common house-fly. I conclude, therefore, that this ovum had been carried in the uterus for close on seven months after its dissolution. As the vaginal discharge had not become fœtid until within the last few days, we may suppose that the ovum did not become putrid until its partial extrusion from the uterine cavity. This lady recovered, and had two children subsequently.

A case occurred in the experience of Dr. Ingleby where the embryo perished, and the ovum became "devitalized" (to use the expression of Davis) at the third month of gestation, and was not thrown off till the full term of nine months.

How long the ovum may be retained in the uterine cavity, after its vitality has ceased, is a question that interests the practitioner, the pathologist, and the medical jurist. My own experience and researches upon this point tend to show that the ninth month of the pregnancy is

the outside limit of retention of the blighted fruit of conception. This would seem to be the opinion of Dr. Ramsbotham also; and I have not met with any well-authenticated instance, in modern authors, where this period was overpassed, except two cases mentioned by Velpeau. Whilst making this statement, which I believe to be consonant with facts, I must, at the same time, add that I do not see any reason, *à priori*, why an early ovum should not be retained beyond the nine months, when a foetus dying near the full time may be carried much beyond the ordinary period of gestation—as shown by the cases recorded by myself and Dr. Oldham, under the designation of “missed labour.”

It is not possible, I believe, to pronounce, with any degree of certainty, from the appearances of the ovum, how long it had been carried *in utero* after being deprived of vitality. In one case the lapse of a few weeks will suffice to produce the same alterations as are met with in another case after the lapse of as many months. Here our knowledge is at fault, and, therefore, in every particular instance it behoves us to speak reservedly as to the duration of the pregnancy, for fear of implicating our own or the patient's character. This introduces to us another and very important aspect—namely, a moral or medico-legal one—under which may be regarded the class of cases we have been considering. Dr. Montgomery has not failed to recognise their importance, viewed from this point of view, and gives striking cases in illustration, one of which I shall cite, with your permission:—“A lady was married in the month of March; menstruated up to June, and not after. In September her husband went abroad, leaving her, as was supposed, in the third month of pregnancy, of which she had all the symptoms. On the 4th November, and again on the 2nd December, she had some sanguineous discharge, which was looked on as a return of the catamenia, and it was now concluded she was not pregnant, but irregular. These discharges, however, did not recur until the middle of March of the following year—that is, nine months after the last regular menstruation, when an ovum was discharged of apparently two and a half months' development, the consequence of which was a conviction, on the part of some members of her family, highly derogatory to her fair fame. However, before proceeding any further, the ovum was fortunately shown to a judicious medical friend, who, wishing to have his own judgment fortified by the opinion of another, submitted the ovum to me for examination, and the real nature of the case appeared at once manifest. . . . Of the true history of the case there seemed to me no doubt. The lady had conceived, in all probability, soon after the last regular menstruation in June; and about the time of her husband's departure in September the ovum was blighted, and miscarriage was threatened in November, and again in December, but did not take place; and the blighted ovum having lost its vitality and uterine connexion,

ceased to grow, but was retained in utero until the ninth month from the time of conception, when it was expelled."

In any case similar to that just related, if the practitioner, failing to interpret aright its real nature, should found his opinion as to the date of conception merely upon the degree of development or size of the ovum, it is obvious he would make a great mistake, and one that might entail very serious and unpleasant consequences to himself and to the patient. In every case, then, where our opinion is asked for as to the age of an ovum, it is a wise and safe rule to qualify our reply by saying *that at the time its vitality ceased it was* of such and such an age. We should carefully abstain from intimating how long she may have been pregnant, and thus, you perceive, we avoid all reference to the date of conception, which, in disputed cases, is really the delicate point. The size of the ovum (as distinguished from the embryo) is no reliable guide to the age of the embryo; for oftentimes the placenta and membranes have a size and thickness much beyond what the mere embryonic development would lead us to expect. Mauriceau, in his 150th aphorism, recognises this fact, and lays down the rule that the size of the foetus, in those dead abortions, does not always correspond to the period of pregnancy. Whether the secundines can continue to grow in a normal healthy manner after the death of the embryo, seems to be a moot point. The examination of a large number of aborted ova leads me to the conclusion that such progressive development may go on for a limited period; whilst that a morbid growth—such as hydatigenous or cystic disease—may take place, and proceed even to a great extent, is very well known. I confess I do not see any anatomical difficulty in either case, as the placenta and membranes derive their nourishment from the uterus, and not from the foetus. It is far from uncommon to find no trace or vestige of an embryo in the sac of the amnion—it having been either dissolved in the surrounding fluid, or the ovum never having contained an embryo, being, as Duncan expresses it, "addled from the beginning." Hence, paradoxical though it may appear, it is possible for a woman to be pregnant, and not truly with child. The *symptoms* which may be expected in any of these cases are very succinctly pointed out by Dr. Matthews Duncan—indeed, upon this point as well as the treatment, I know of no writer who has given us so much valuable information. The usual course of events is very much as follows:—A woman conceives, and has the ordinary symptoms of pregnancy up to the second, third, or fourth month, as the case may be. She then, with or without a threatening of miscarriage, gradually loses the signs of pregnancy, and may, perhaps, have some reason to think that she really has aborted. Her health becomes impaired, pelvic weight and uneasiness are complained of, and she has frequent recurrences of sanguineous discharge, which are often mistaken for irregular menstruation, or there may be, in addition,

periodic menorrhagia. In some cases the discharge is foetid, and in others it is not so. It is commonly at this stage of her history that our advice is sought; and the chief questions which present themselves for solution are:—1st. Is the uterus avid? If so, is the embryo living, or is it dead? In fact, our inquiries narrow themselves to this one, which is of paramount importance—viz., does the uterus contain a *living ovum*? This point once decided, our ulterior proceedings are, comparatively speaking, plain enough. Duncan observes that “the diagnosis will be easily made if the practitioner only suspects the true nature of the case, and is thus induced to investigate it.” But in very many cases a great deal more is needed, in order to arrive at a correct solution of the problem before us. Montgomery gives very excellent and judicious advice to aid us in discriminating these cases, and has well described the difficulties that beset us in making a diagnosis. “I know of no class of cases,” he writes, “more unsatisfactory or puzzling.” Besides the irregular discharges of blood, or bloody mucus, from the vagina, there is sometimes considerable periodic menorrhagia as well. The os uteri will be generally found in a gaping, patulous state, whilst the body of the organ is more or less enlarged; if, along with these symptoms, the discharges have a foetid character, there need be little hesitation in coming to a conclusion. Putridity of the discharge is a circumstance of great semeiological value in these cases, but unfortunately this symptom may or may not be present. Dr. Duncan has specially investigated the subject before us from this point of view, heading his memoir, “Presence or Absence of Foetid Discharge in Cases of Imperfect Deliverance.” If the membranes are unbroken, and the air has not had access to the interior of the uterus, there are grounds for believing that putrefactive decomposition will not take place. This is my own experience, as well as that of Velpeau, and I have found it to hold good at every period of pregnancy, and not in the early months only. As bearing on this circumstance—the putridity of the discharge—I may mention that once this has been decidedly developed, there is seldom any considerable amount of hæmorrhage. This I first learned from the late Dr. Charles Johnson, and I have found it to be pretty generally correct. The catalogue of constitutional symptoms, laid down by Burns and other writers as belonging to these cases, really does not present characteristic features, as these symptoms might often be adequately accounted for by the hæmorrhagic discharges, and the prolonged confinement of the patient to the house or sofa. At the same time, I am far from denying that a formidable train of symptoms, resembling those described by Puzos, Burns, and many other writers, does sometimes occur where there is retention of a portion or of the entire of the ovum; and I believe we may lay it down as an aphorism, that the more advanced the development of the ovum is, so much the more likely is the retention to be productive of ill consequences

to the health of the patient. On a few rare occasions I have seen symptoms present that might, perhaps, have been set down to septicæmia; and two cases have fallen under my notice of phlegmasia dolens, of one and of both legs, induced apparently by the presence of a portion of the dead ovum in utero.

The following is a fair typical case of the kind which it is the object of this paper to bring under the notice of the Society; and I relate its history as I am able to exhibit the ovum whose retention in utero was the cause of the lady's prolonged indisposition. This lady, the wife of a surgeon in the army, ceased menstruating the 11th November, 1873, and soon afterwards all the symptoms of pregnancy gradually became developed. The latter end of January she got a fright out driving, and was much shaken in a covered car; this succeeded a sharp attack of diarrhoea, lasting for three days, and then controlled by opium. From this time all the symptoms of pregnancy subsided. The third menstrual period (beginning of February) passed over without any appearance of blood, but soon after this, and about the middle of the month, some red discharge began to flow from the vagina, not in any considerable quantity however, nor for any length of time. It recurred again and again at uncertain intervals, of two or three or four days, obliging her to keep very much within doors, and to use little or no exertion. The returns of the menstrual epoch were marked by the loss being tolerably profuse. Her health became somewhat impaired; she lost colour, got dark under the eyes, and was out of spirits. Things went on in this manner for several weeks, when I saw her passing through Dublin; and being allowed to examine her, I satisfied myself there was some enlargement of the body of the uterus, but no other symptom of pregnancy. There was no discharge at this time, neither was there ulceration or patulence of the os uteri. On the 11th June, after some hours' continuance of pain, and bloody discharge, an ovum was expelled, which I now exhibit to the Society.

From the appearance of this ovum, when recently discharged, I concluded it had a development of about six or eight weeks, so that it was incarcerated, subsequently to its being blighted, for about five months. At no time during the progress of this case had the discharges any foetid character.

I very much fear I have extended this paper to an unwarrantable length, so I shall conclude with a very few observations respecting the treatment to be pursued in cases of the kind we have been considering. In by far the major proportion of them, time and an expectant treatment will suffice to bring matters to a successful issue. The chief source of anxiety is hæmorrhage, and hence the management of the patient must be mainly directed with a view to ward off or restrain the loss of blood. If the losses be frequent or severe, or if the patient and her friends be

urgent for prompt and decisive treatment, we have, fortunately, an alternative measure to fall back upon, of which our obstetric predecessors had no experience. David Davis in his great work upon "Obstetric Medicine," published in 1836, when speaking of retention of the placenta or membranes after abortion, adds—"this (retention) is the more unfortunate, inasmuch as art has little in its power to effect for the relief of such cases." Now the alternative measure to which I have alluded consists in the artificial dilatation of the neck of the womb, and removing from its cavity the ovum, or whatever may remain of it. For the extraction of these substances, Levret, Dewees, Boud, Churchill, and myself, have devised special instruments; but unless the neck of the womb be well open, their employment is unsatisfactory and hazardous; except, indeed, the offending substance happen to be protruding from the os uteri.

The dilatation of the cervix uteri by sponge or laminaria tents is generally a safe proceeding, but if any inflammatory action were present it should on no account be attempted.

DR. CHURCHILL said—I have met with several of the cases described by Dr. M'Clintock in my practice, and, although I have not accurate data to fix the period of the retention of the ova, they were all retained sufficiently long to give rise to difficulty, and there is great difficulty—more than one would think from hearing them read—in dealing with these cases. It is not easy for the practitioner to resist two disturbing influences that always act. The lady tells you that she is not likely to be in the family-way, and that has, insensibly, some influence on you. A lady came up from the country to consult me for a tumour. I found the uterus as large as if it were four months pregnant. She had had twelve children, and, therefore, she had some experience. She told me she had not had a single symptom of pregnancy; she was regular; she had no mammary symptoms, and was quite certain she was not in the family-way. With that positive testimony, I considered myself at liberty to make an examination with the sound. I got it up five inches, and it gave no pain, and was followed by no discharge whatever. I said it would be necessary to make a still further examination by tents, but that evening I was sent to, saying she was bleeding to death. Of course, she was not; but I learned that she had uterine pains, and I found a foetus between three and four months old in the vagina. I got it away with the placenta. I was asked by the surgeon of a regiment to see the adjutant's wife. She had nursed her child to within two months. She had had several children, and her statement was that she had menstruated twice, and that she had never menstruated during pregnancy, so that, as she said herself, she could scarcely be supposed to be pregnant. There were no mammary symptoms, or sickness of stomach, but the uterus was undoubtedly enlarged. Taking these circumstances into considera-

tion, I thought it necessary to examine with the sound. Again the introduction of the instrument was followed neither by blood nor water. I stated that I would come up the day but one afterwards to introduce some tents, but I got a note next morning, stating that she had been taken with agonising pain in the evening, and a macerated foetus was expelled. It must have been retained some months after it had died, yet everything was in favour of the idea that she was not pregnant. Then, again, you are misled by a lady telling you she knows she has miscarried. She has seen the lump expelled; or, the nurse has told her it was a miscarriage; or sometimes you are informed that the doctor said so. One lady told me she had miscarried three or four months ago, and had menstruated since. I thought the case one of menorrhagia, and gave her a little ergot of rye, which brought away a blighted ovum. In not a single case have I seen an offensive discharge. In another case, Dr. Pollock consulted me for a case under his care of menorrhagia, at the regular menstrual periods. The lady said she had miscarried three or four months before. I found the uterus enlarged, but not very much, and found a gaping, granular mouth of the womb; it appeared to be a case of granular endo-metritis, and as such I treated it. In the evening she was seized with a furious hæmorrhage, and Dr. Pollock was sent for. I saw him the next day, and it was agreed to plug the mouth of the womb. When Dr. Pollock went the next day to do this, he saw something protruding from the os uteri, and he got out a blighted ovum, which had been retained a considerable time. Fortunately, the treatment is not so uncertain as the diagnosis. In the first place you must restrain the loss of blood. You may do this by plugging, and, probably, the best remedy you could have for menorrhagia would be the best in these cases of the retention of a dead foetus—namely, ergot of rye. I have seen in these cases extremely beneficial results from the use of that drug.

The PRESIDENT said—Dr. McClintock's paper involves not only the question as to the possible duration of the retention of a blighted ovum in the womb, but a medico-legal one, when it becomes necessary to say how long it had been retained, and, further, that of diagnosis. I had an opportunity twice myself of coming to a fair conclusion as to the length of time which an ovum, after its death, may be retained in utero. A lady, in the fifth month of pregnancy, was a passenger in a train which met with a frightful accident. At the time she felt no bad effects from the shock and fright, but the uterus did not subsequently increase in size. She passed thirteen weeks without any other abnormal symptom. After that interval profuse hæmorrhage suddenly set in, and she gave birth to an ovum which was not larger than it should have been at the time the accident occurred. In this case there was not any foetus, and the child was not decomposed. I have no doubt that it died at the time of the

accident, and was retained in the womb for the length of time I have mentioned. Recently a lady consulted me, and said that she had two months previously aborted at the eighth week of pregnancy; that lately she had had a recurrence of the menstrual period, but that it was very scanty. I found the uterus to be of considerable size, and it occurred to me that possibly she had not aborted, and, therefore, I did not make any examination with the sound, but told her to come to me after the lapse of a month. On her doing so, I found her condition to be unaltered; a sanguineous discharge had occurred twice in the interval, but it evidently was not the normal menstrual flow. I therefore again deferred exploring the interior of the uterus. Another month elapsed; a brownish discharge was constantly present. The uterus, however, had not increased in size. I, therefore, now introduced the sound. A few days afterwards she brought me a small ovum which she had expelled the day after her last visit. I am of opinion that the ovum was retained from the time she thought she had aborted—namely, for a period of four months. The questions of diagnosis and of treatment were both involved in this case. If the symptoms complained of were due to the retention of the blighted ovum, it should be removed. If, on the other hand, they depended on an unhealthy condition of the intra-uterine mucous membrane, that should be treated. But in this and similar cases, where no urgent symptoms exist, we should wait. Of course we all know that portions of an ovum may be retained for a long time. I once dilated a uterus, thinking I was going to remove a polypus. Instead of that I removed a portion of a placenta which had been retained for upwards of three months. Fœtor was not a usual feature. In the case last referred to, although the ovum had been discharged three months previously, there was not the slightest fœtor, and air must have entered the uterus, for the os was quite patulous; but then the portion of placenta retained was attached to the uterus, and was, in fact, a living body.

DR. J. A. BYRNE said that Dr. M'Clintock's paper touched on an important branch of practice. He happened to see a good number of cases of abortion; and it was his opinion that, as a general rule, the ova were not expelled for a considerable time after they had perished. It was generally taught in books that the ovum was very soon expelled after it had died, but his experience did not bear that out. Nothing was more common than to be called on to attend in a case of abortion, where the woman declared herself to have been three months pregnant, but where it was found that the ovum did not correspond to that period of pregnancy, but consisted merely of a rough decidua, and no fœtus. The history of such cases was probably this:—The ovum progressed for a short time, and for some cause which they could not explain—want of nutrition, an accident, or nursing—it perished, and remained for a

considerable time, two or three months, in utero. Another point of importance in Dr. McClintock's paper was the ovum remaining in the womb without any degeneration; and he believed that wherever vesicular degeneration was the result, it must be looked upon as a special disease. The fact of the dead foetus remaining in utero, without producing putrefactive symptoms, was another point of interest. As long as it remained in the uterus it did not decompose, but the instant the ovum came into the external world, putrefaction set in. This was the general rule; but he had seen a case of a lady who had a piece of dead chorion retained for three months, with constant attacks of hæmorrhage, and there was not the least putrefactive odour. Non-putrefaction may generally be attributed to non-contact with the external air, but there may be some other reason why a putrefactive effect does not occur.

DR. DENHAM—I agree in all that has been said respecting Dr. McClintock's paper. We are almost, I fear, darkening counsel by words, for he has given us everything that can be said on the subject. It is one of the deepest practical importance—one that comes every day before us, and gives us a vast amount of anxiety, worry, and sometimes disappointment. There are several points to be considered. The first is the safety of our patient; the second is the life of the foetus, and that is a point of great difficulty—to determine whether the foetus is alive or not. There are other points of deep importance. Our professional character is more often tested by cases of this kind than by any other that come under the practitioner. Then there are the feelings of the patient, of her family and friends, to be considered. In fact, they are cases surrounded by a greater amount of annoyance than any other that cross the path of the midwifery practitioner. If we can come to the conclusion that the foetus has perished, there is no difficulty as to our line of practice, but that is a most difficult point to determine. An English lady came to Ireland, and visited the Lakes of Killarney, but she did not know that she was pregnant. She got hæmorrhage, and thought it was excessive menstruation. She came to Dublin, and was under my care for two months. She lost a great deal of blood, so that no one could imagine that she would produce a living child, yet she did, and it survived. If I had dilated the os in that case I should have been guilty of a great malpractice. A lady came to me two years ago. She stepped suddenly out of her carriage, and said she felt at the time as if something gave way, and on that night she aborted without the loss of a teaspoonful of blood. She is now under my care. She suffered intense pain, has passed a large amount of clots and of blood, perhaps a foetus, and is in a wretched state of health, and altogether I found it to be a most perplexing case. We are much indebted to Dr. McClintock for his useful and practical paper, which will confer a benefit on the public at large.

DR. M'CLINTOCK thanked the speakers for the kindness with which they had received his paper. It brought before them a subject which, as Dr. Denham said, often caused a vast deal of annoyance, suspense, and anxiety in the mind of the practitioners and the friends of the patient, and very often that state of uneasiness and suspense was prolonged for weeks. The tendency of Dr. Denham's observations was to confirm him in the belief that the great important practical question for their consideration narrowed itself into this—does the patient carry the living foetus or not. If all the evidence led to the belief that the ovum was dead, then the treatment was simple. On the other hand, the practitioner was brought to a woman losing blood for weeks and weeks, and he might be inclined to say, "It is impossible normal pregnancy can be going on, or that the foetus is alive;" and yet such cases had been frequently seen. He (Dr. M'Clintock) was present once at a consultation with six distinguished accoucheurs, and they could not say whether the foetus was dead or not. Treatment was adopted for a dead foetus resulting in the expulsion of a living foetus. Unless the evidence was most clear, such as the presence of a putrid discharge, the practitioner would not be justified in adopting means that would of necessity bring on miscarriage. So that in fact in dealing with these cases they must try to steer between Scylla and Charybdis. The maxim that would animate him was, that though he could not decide whether a foetus was living or dead, still if the hæmorrhage was so great as to endanger the woman's life, he would then discard every other consideration and would not hesitate to give ergot, to plug the vagina, or introduce the sound. But in case he was not very clear about the diagnosis, he confessed he would be very slow indeed even to use the sound. A good many instances had been mentioned of the kind of cases contemplated by his paper, which showed that they were not of uncommon occurrence. The weight of evidence tended to show that the discharge of the foetus occurring immediately at the time of its death was a rare concomitant, and that, certainly, was his own feeling.

A Case of Intra-Uterine Amputation. By A. V. MACAN, M.B., M.Ch.

MR. PRESIDENT AND GENTLEMEN,—The case I have the honour of bringing under your notice this evening is one of spontaneous amputation of the left forearm of a foetus, in utero.

That such cases are very rare may be gathered from the fact that, so far as I can ascertain, there is no case on record as occurring in the Rotundo Hospital during the last thirty years. That such a thing is possible is of itself interesting, but I think the chief interest of such a case lies in the inquiry as to the cause or causes by which such a deformity can be produced.

CASE.—Catherine Brady, aged thirty-one, was admitted into the Rotundo Hospital on October 23rd, 1874, and was delivered, after an easy labour, of a fine healthy boy, which weighed 6 lbs. 12 oz.

On the birth of the child it was at once thought that the left forearm was entirely wanting. From the appearance of the end of the stump, it was plain that it was not a case of arrest of development, but of spontaneous amputation; and though the missing portion of the limb was carefully looked for it could not be found.

The woman had had five children, who were all strong and well-formed; she enjoyed good health during this pregnancy, which differed in no way, that she could remember, from any of her previous ones.

On examining the limb more carefully it was found that the seat of the amputation was not through the elbow-joint, as had at first been supposed, but through the forearm, just below the insertion of the biceps. On the surface of the stump there was a semicircular cicatrix, about the size of a threepenny piece, which had evidently been a long time healed. Just beneath this, but not adherent to it, could be felt the end of a small bone. When this short stump was flexed by the action of the biceps, the effect was as though the arm itself was suddenly shortened and its end flattened out. When the arm was flexed the olecranon process could easily be made out posteriorly.

When asleep or at rest the forearm was kept extended, but when aroused the child flexed the arm frequently. It was perfectly formed in all other respects, and thrived well during the time its mother remained in hospital. She herself was evidently greatly distressed by the deformity, and was most anxious to find out something she might blame for it.

The difficulty of getting the limb photographed was great, but I am happy to say that the photographer has succeeded in getting an impression, which conveys a very good idea of the deformity.

It is, I am sure, well known to the members of this Society, that our fellow-countryman, Montgomery, was the first who gave any satisfactory explanation how such a lesion could occur. To his able paper on the subject I am indebted for a large portion of the information I have been able to collect on this interesting subject.

Before his time the deformity had been noticed by many of the older writers, who, however, explained it as being the result of inflammation and consequent gangrene. The first case that drew Montgomery's attention to the subject was one reported by Mr. Watkinson in the *London Medical and Physical Journal* for July, 1825. In this case it was found, on the birth of the child, that the left leg a little above the ankle-joint was wanting. On searching for it the missing foot was found. The surface of the stump was nearly quite healed, and the foot, which from its relative size seemed to have been about two months separated, showed no signs of putrefaction, but appeared to be in a state of perfect preser-

vation. This condition of the foot, of course, excluded any idea of gangrene, and Montgomery was quite at a loss how to account for the lesion.

Four years after reading the above, he was fortunate enough to meet a case in his own practice which enabled him to give a satisfactory explanation how such a deformity might be produced. It was a case of abortion at the fifth month, in which he found, on examining the fœtus, which was greatly deformed, that the legs were tied tightly together just above the ankles by ligamentous bands, which had penetrated fully two-thirds of their thickness, without there being any breach of the skin, any appearance of disease, or even any discoloration of the parts.

It would occupy too much time to go through the cases, in number about twenty-eight, which Montgomery brings forward in support of the theory that such lesions are caused by bands encircling the limbs and acting like ligatures. Suffice to say, that among these twenty-eight cases may be found illustrated all the different effects produced by ligatures, from a mere indentation of the skin to total separation of the limb.

But even when we have come to the conclusion that such lesions are the result of ligatures applied to the foetal limbs, several important questions still remain to be answered, viz. :—

1st. How are the ligatures formed or produced?

2nd. How are they applied round the limbs?

3rd. How do they produce their effect?

Montgomery thought they were formed of organised lymph the result of inflammatory action, and were similar to the bands sometimes found connecting the lungs and the walls of the chest, or the intestines, and more especially the uterus and its appendages, with each other.

As to the way these bands become applied to the limbs, Montgomery confessed he could give no explanation, but he rejected the theory put forward by Professor Gurlt to account for their origin and application. Professor Gurlt's theory was that these bands were formed by adhesions taking place between the skin of the fœtus and the amnion. As the liq. amnii was secreted, it tended to separate the two points thus adherent, and the tissue joining them became stretched out, and twisted by the movement of the fœtus into cords, which the same movements would easily twine round the limbs of the fœtus. The reasons Montgomery gave for rejecting this theory seem to me quite insufficient.

The third question, as to how these ligatures produce their effect, is not so hard to explain.

In the first place the ligature, if formed of organised lymph, has itself a tendency to contract on the limb which it encircles. But even if this were not the case, the growth of the limb itself would have a like effect. The degree to which the limb will be constricted by the ligature seems to depend in a great degree on the time of intra-uterine life at which it

first becomes applied, and of course on the tightness of its first application, which is probably much the same in every case.

Corresponding to this difference in the time of the application of the ligature, are the different conditions of the stump or limb at the time of birth. If the ligature has been applied early in foetal life you will find the limb most probably wholly amputated, and the stump quite healed. If somewhat later, you may still find the limb amputated, but the stump will present a small portion of its surface still unhealed, which is always found to be the end of the bones. If the ligature has been applied at a still later period, you may find nothing but a furrow or indentation on the limb. This will also, to some extent, explain why the amputated portion of the limb is so often not found. For if the separation has taken place early in pregnancy, the part amputated is very small, and is subjected to the action of absorption within the uterus during a long period. On the other hand, the nearer the end of gestation when the limb was amputated, the larger it will be, the shorter time it will be subjected to absorption, and the more likelihood, in proportion, of its being found. That such absorption does take place is probable from the analogous cases in which whole ova or part of an ovum have been absorbed in utero. The fact also, that even in those cases where, from the very nature of the deformity, it seems certain that it was caused by a ligature, the ligature is often not found at the time of birth, would lead to the conclusion that the ligature, though at one time present, had been since absorbed; and if a ligature is thus absorbed, why not an amputated limb.

Dr. Simpson, in a paper read before the Medico-Chirurgical Society of Edinburgh, in 1841, notices a very curious occurrence in some cases where the limb has been spontaneously amputated—viz., a tendency to the rudimentary reproduction of the amputated member on the face of the stump.

After noticing that the lower you descend in the animal kingdom the more readily is an amputated part reproduced, and having given a case in which a supernumerary thumb was reproduced after being amputated, and another case in which a nail grew on the second phalanx of the finger after amputation of the first, he gives two cases in which, after spontaneous amputation of the forearm in utero, rudiments of fingers with nails attached were reproduced on the face of the stump. He says this rudimentary reproduction of the amputated limb is most frequently met with when the forearm is the seat of the amputation. He also notices the curious fact that in most cases, as in the case I have just had the honour of bringing before you, it is the left forearm that is amputated.

It has been held by some that spontaneous amputation may be caused by compression exerted by the cord. This seems at first sight almost

impossible; for one cannot but think that any compression exerted by the cord on a limb, sufficient to produce amputation of that limb, would immediately stop all circulation in the cord and so lead to the death of the fœtus. In other words, one essential condition for spontaneous amputation to take place is, that the fœtus should continue to live for a considerable time after the application of the ligature.

In support of this view I may mention that, though Montgomery gives several cases in which the limbs were indented or furrowed by the cord, in none was the limb wholly amputated, and in most of them the fœtus did not live beyond the third or fourth month. In nearly all of these cases the limb affected was on the left side of the body.

However, a number of authors have declared their belief in the possibility of amputation through such compression, and we must suppose that in such cases the compression is exerted more especially on one artery of the cord, and that the Whartonian jelly is very firm and plentiful. In support of this view these authors bring forward the fact that a living child has been born in cases where the cord was tied in a firm knot.

That the left side is the side affected in the great majority of cases seems to depend on the fact that the movements of the fœtus in utero, as deduced from the direction in which the cord is twisted, takes place in most cases from left to right.

Scanzoni, in a short chapter on intra-uterine amputation in his work on Midwifery, while allowing that in the great majority of cases such amputations are the result of compression exerted by adventitious bands, thinks that in the case given by Martin, when there was the history of external injury to the mother's abdomen, the cause of the amputation of the arm was most likely fracture, followed by extravasation of blood, and causing pressure on the nerves sufficient to lead to deficient nutrition of the part, and consequent gangrene. He thinks that in cases where the child is in every other respect well formed, the cause of the deformity is probably fracture; for in cases where ligatures have been proved to be the cause, the deformity was seldom confined to the mere amputation. *A priori*, it would seem highly improbable that anything like a symmetrical deformity could be caused by adventitious bands formed by chance. In cases, therefore, where the lesion is symmetrical and the child well formed in other respects, Scanzoni thinks the origin of the deformity is rather an arrest of development than spontaneous amputation.

Simpson, also, in the *Dublin Medical Journal*, 1836, threw out the suggestion that perhaps in cases where there are any rudiments of fingers, &c., formed on the stump, the case is one of arrest of development, but that in cases of spontaneous amputation the stump resembles in every respect that left after an ordinary amputation.

In conclusion, I would remark that Schröder, in the last edition of his

Midwifery, states that such mutilations are caused by amniotic threads formed by adhesion between the foetus and amnion during the early periods of intra-uterine life. That a delay in the secretion of the liq. amnii, or a small quantity of that fluid, predisposes to the formation of these adhesions. That as the quantity of liq. amnii increases, the amnion is lifted up from the surface of the foetus with which it was at first in contact, and that thus cords or bands are formed.

Fürst, in an article in the 2nd vol. of the *Archiv für Gynäkologie*, while giving three theories for the production of these bands, concludes that they are formed chiefly by some interference with the due formation of the sac of the amnion, and subsequent "plastic adhesion."

That these bands, if, instead of encircling a limb, they are only inserted into it, and thus produce a constant traction in the same direction, are capable of producing various other deformities, as crooked limbs or dislocations, is obvious.

That all these solutions are but putting the true question one step further backwards is self-evident. For even if we have proved that spontaneous amputation is caused by adventitious bands passing from the amnion to the foetus, the question still remains to be answered—viz., what causes the formation of these adventitious bands?

The PRESIDENT said the interesting communication just read differed from that which had preceded it, inasmuch as the cases referred to in the former were common, whereas amputation in utero was rare. It was the first case he was aware of as having occurred in Dublin for many years, and he believed Dr. Macan had given them all the information that was known on the subject.

DR. KIDD—We have been fortunate, or perhaps I should say unfortunate, in the Coombe Hospital. My own experience does not extend to altogether thirty years, but I have seen four cases of this condition occur. In one of those cases in the Coombe Hospital the child died soon after birth. Dr. Montgomery assisted me in the examination of the child, and he said that he thought it the most interesting and remarkable case of the kind he had ever met with. In that case I was fortunate enough to find the limb. One leg was amputated midway between the ankle and the knee. I was not present at the birth, but when I paid my visit in the morning I succeeded in getting the membranes; and, searching carefully in them, I found the amputated extremity. The other leg was partially amputated, and there was no evidence how the amputation had taken place. In one hand a fine band passed from the top of the index finger, partly enclosed the middle finger, and attached it to the ring finger. It had very nearly cut off the top of the middle finger, and some of the fingers of the other hand had the same kind of bands attached

to them. We have the preparations still in the hospital. Unfortunately the foot was allowed to dry before it was put in spirits, and it has not expanded. It is a very interesting specimen, and proves the existence of these bands, though it does not throw any light on the source from which they are derived.

DR. DARBY said he had never seen a case of a child born with a limb amputated in utero, but he knew persons in after-life who were said to have been so born. One gentleman told him his mother informed him that he was born without the right hand, and that the doctor who attended her said it had been amputated in utero. He had examined the arm of that gentleman more than once, and had not the slightest doubt that it was a case of defective development. It was like the fin of a porpoise, and in the stump were distinctly to be felt all the bones of the wrist and hand completely enveloped in skin. Within the last three or four years a woman came into his hospital from Kingstown, and she had the same kind of stump precisely. He felt all the bones of the hand and could count them. He thought it probable, therefore, that some of these cases set down as amputations in utero might in reality be cases of arrested development.

DR. DENHAM asked Dr. Kidd what was the difference of development between the child born and the foot that had been amputated. It was quite clear, however much there might be in what Dr. Darby had stated, that in Dr. Kidd's case the amputation had taken place, for the foot was found. Whether an arm might be amputated and an attempt made by nature to make up the deficiency, was another question.

DR. KIDD said:—We considered the question very anxiously, and Dr. Montgomery and I arrived at the conclusion that there were two months' difference between the development of the child and the foot. The child was born at the full time of nine months. The last case we had was of a woman who was a considerable time in the hospital as a patient during pregnancy for chronic inflammatory tumour in connexion with the uterus, a localised peritonitis. After she recovered and left the hospital she came back for her confinement. Her child had the two arms amputated and one leg. The child lived, and used frequently to visit me. He was a remarkably intelligent child, and had remarkable power in the use of his toes—he could seize a piece of bread and butter between his first and second toes and convey it to his mouth, and take a pencil between his toes and amuse himself drawing with it. His mother got an artificial leg made for him, which he wore with very great satisfaction, but he would not allow a boot to be put on the other foot, which he used for manipulative purposes.

DR. DENHAM.—I asked the question because it throws considerable light on the mode of amputation. If we consider that the pressure of the cord takes place at a very early stage, we may imagine that a very small pressure would be sufficient to stop circulation, when a species of mortification might take place, and the dead body be thus separated from the living.

DR. KIDD.—There was no sign of putrefaction whatever.

DR. DENHAM.—It may not be putrid. I believe it is a living process that takes place in the arm or leg by which the living part separates itself from the dead.

DR. HENRY KENNEDY said he believed that in the new process of amputation by the elastic band, the amount of pressure was extremely small in proportion to the effect produced.

DR. M'CCLINTOCK.—Dr. Kidd mentions a fact that bears out the view I have put forward in my paper to-night. He states that the amputated limb was not in the slightest degree decomposed, although he believes it had been separated for two months before the birth of the child. It was deprived of all vitality for two months, it was surrounded by fluid, it was at a high temperature most favourable for putrefaction, and yet there was no sign of decomposition. Does not that prove that there is something highly antiseptic in the uterus? I stated in my paper that I had seen cases which bear out the belief that if atmospheric air be not admitted, putrefaction does not take place. We have seen a fœtus expelled in a softened state, but perfectly inodorous; and in a few cases, where the membranes were ruptured and atmospheric air obtained admittance, I have seen putrefaction and decomposition progress with great rapidity in the course of twenty-four hours. I remember when I was assistant at the Rotundo Hospital, a woman being brought in, and the ward in which she was placed was pervaded by the most sickening smell. She had been in labour for days under the care of a midwife, and the membranes had been ruptured for some forty-eight hours. Emphysema arising from putrefaction had taken place, and the head of the child was a large, doughy, emphysematous mass. I sent for old Dr. Labatt, and when he came into the ward his horror exceeded anything I ever saw, and when I brought him over to the bed he examined the patient at arm's length, so dreadful was the odour. The child was a large, well-developed child, and was alive two or three days previously, and yet within that time all this dreadful putrefaction had taken place.

DR. MACSWINEY wished to remind the Society that the conditions laid down in all elementary works as necessary for the setting up of a putre-

factive process in animal tissues, were air, moisture, and a certain temperature. Now, seeing that in the case of the womb no air can obtain admission, he should like to know whether any animal decomposition had been known to have taken place without the presence of air? He should say the surprise would be if animal decomposition took place without the presence of air, and not that it did not occur.

DR. C. F. MOORE said that if the cord got round the limb of a foetus, as the latter increased rapidly, it was easy to understand how the circulation would be stopped and the growth arrested.

DR. MACAN, in reply, said there could be no doubt that the amputation was caused by bands. Where they came from, and how they worked, were the questions to be decided. He thought the action of the bands was purely mechanical, and that they had no vital action whatever.

The Society then adjourned.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

Wednesday, December 2nd, 1874.

President—CHARLES D. PURDON, M.D.

Honorary Secretary—J. J. CHARLES, M.D.

The President, DR. CHARLES D. PURDON, delivered the Opening Address, on—"The Past Medical Charities of Belfast as compared with the Present."

Necrosis of the Cranial Bones. By J. KNOX HOUSTON, M.D.

THIS affection is almost always set down as being of syphilitic origin. Certainly, in the great majority of cases, this is true; however, I cannot doubt that scrofula more frequently determines necrosis and exfoliation of the cranial bones than is supposed.

The correct diagnosis of these cases is of great importance, as upon it depends the prognosis, whether hopeful or otherwise. When the previous history throws no light whatever on the case, and when the nature of the disease is not suspected by the patient, it is especially difficult to make a safe diagnosis; and the grounds upon which this may be accomplished are worthy of careful consideration. To Virchow, perhaps, the most careful investigation of the changes which take place in connexion with syphilitic deposit in bone and periosteum is due; and from the researches of that eminent author we are enabled to discern such marks and characteristics as shall lead us to determine, from the nature of the lesion, *per se*, whether it be of syphilitic or strumous origin.

All the changes which occur in bones or periosteum affected with syphilis have their starting point in the same pathological phenomenon, namely, a deposit of syphilitic lymph or syphilomatous matter, a substance consisting of cells and nuclei. This deposit occurs between the periosteum and the bone, in the medullary cavity, and in the Haversian canals and lacunæ. In the case of the skull, it is laid down either underneath the pericranium, in the diploë, in the Haversian canals, or between the bone and dura mater. Now it is upon the changes which take place in this material that all the subsequent characters which the disease assumes depend. If this lymph is of a firm or plastic character, then hard nodes, exostosis, thickening, and hypertrophy of the bone result. If, on the

other hand, it is of the soft variety, with a tendency to break down and disintegrate, then ulceration, caries, and necrosis ensue.

Suppose we have a case of necrosis attacking the bones of the skull, how are we to determine, apart from the history of the case, whether its nature is syphilitic or strumous?

In the first place, Virchow lays it down, as a rule, that syphilitic necrosis is essentially a *dry* one, that is to say, it is not attended with suppuration. It seems probable that, after the syphilitic matter has done its work in separating from the bone both pericranium and dura mater, in a case where both tables are affected, that it is then disintegrated and re-absorbed, leaving the affected portion of bone dry and exposed. While these changes are occurring on the surface and underneath the bone, the matter which had been deposited in the Haversian canals and diploë also becomes disintegrated and undergoes absorption, forming carious spots in the necrosed portion, which give it a characteristic worm-eaten appearance. In the second place, the mode of separation of the sequestrum is very characteristic in syphilitic cases. A formative process occurs around the dead portion. A thin, vascular substance, according to Virchow, is first formed round the circumference of the diseased spot, and this subsequently undergoes ossification, and so the thickness and density of the edge of the living bone are increased. A process of this kind is never observed in scrofula. In scrofula the Haversian canals and lacunæ of the living bone around the dead portion are, indeed, found enlarged and numerous, and filled with a lowly organised lymph, showing a marked tendency to suppuration; but no true marginal ossification occurs. According to Goodsir, Küss, and Virchow, it is by the production of this pus, in cases of scrofula, that the dead bone is separated and floated off.

The following case will serve to illustrate some of the distinctive characters mentioned in this brief outline, and it is especially interesting, inasmuch as the history gives us little or no information regarding its nature.

Mary Duffy, aged thirty-eight, came under my care in the Union Infirmary, on the 15th of March, 1874. She was suffering from necrosis of the bones of the skull. Her family history is the following:—Her father died of pulmonary consumption, and her mother is living and healthy. Ages not known. Had three brothers and one sister. The sister died at the age of seven years from consumption, and one of her brothers, aged four, died from the same affection.

She states that she was married when eighteen years of age, and that her husband is dead. The cause of his death is stated to have been disease of the liver, and ascites. She has had six children, five of whom are living and one dead. The child died at the age of three months, from gradual wasting or marasmus. Those living are all healthy. The

first child was born a year and six months after marriage, and she never had an abortion. Such, then, is the family history.

And, now, we come to consider the history of the disease itself. She began to complain about seven years ago, and then, for the first time, fell into delicate health. She remembers no serious illness from which she suffered up till that date. Severe shooting pains then began to be experienced over the crown of the head, and these lasted for nearly one year. Then the left side of the neck became painful, and soon a soft, fluctuating tumour was noticed, which quickly broke and discharged, and that before any swelling was observed upon the scalp. The deep and excavated opening produced in the neck did not heal up for a long time, the ulceration process extending in one direction while the sore healed in another. The original tumour was anterior to the sterno-mastoid muscle, and near to the angle of the jaw, and the cicatrix extends from that point down the whole length of the muscle, and along the surface of the clavicle to its inner extremity.

A tumour was next observed over the right parietal bone, which assumed the size of a large marble before the skin ulcerated over it. From the opening over this tumour a small piece of bone was discharged, about four years ago. About two years ago a lump was observed high on the frontal bone. This remained stationary for a year or so, still, however, discharging a little watery fluid from very small openings. These tumours were all painful, the pains being subject to exacerbations at night. During August, 1873, she states that the frontal bone was first noticed getting bare. When she came under my care, she was in an extremely cachectic condition, pulse frequent, and very feeble, and a large portion of the frontal bone exposed and dry. There were three other ulcers over the upper part of the right parietal, the base of each showing a piece of dead bone. Very little suppuration was observed.

As she was suffering a good deal from pain and sleeplessness, I ordered a 2-grain opium pill every night at bed-time, and prescribed for her a mixture, consisting of equal parts of the syrup of the iodide of iron and compound tincture of cinchona, and of this she was to take a teaspoonful three times daily, after meals. Her diet included one egg, half a pound of beef-steak, and three pints of sweetmilk daily. Soon signs of great improvement began to manifest themselves, and with these separation of the dead bone commenced. The piece of the frontal which necrosed measured four and a half inches by three inches, and consisted of both tables of the skull. In the bottom of the very large ulcer which remained, the brain could be seen and felt pulsating, separated from the external air by the membranes and dura mater, the latter being covered, however, by very abundant and healthy granulations. Around the sore the living bone was thickened and formed a very prominent ridge. This ulcer rapidly healed up, and a tolerably firm cicatrix was produced. From

the openings over the parietal bone several pieces of the external plate were discharged. I saw this patient again on the 6th of October, and she was then walking about, and apparently in excellent health, having improved exceedingly in flesh and colour. She stated, however, that the sores on the side of the head had not yet healed up completely.

In considering this case, we are constrained to believe that the syphilitic poison alone produced the varied lesions here present, although the history, family or otherwise, sheds little light upon the subject. There seems, however, to have been a hereditary predisposition to consumption in her family, and whether the phthisis of her father or the liver disease of her husband had a syphilitic origin or not remains an important question.

In reviewing the facts of the case, as we have them before us, there are several points which claim our attention. And first of all the age at which disease commenced. This, according to the woman's own statement, was over thirty years. Now, we know that the first manifestations of scrofula are extremely rare after thirty years have been attained, whereas tertiary syphilitic lesions are much more frequently met with after this period of life than before it. Then we have an account of a *peculiar solitary tumour* occurring in the neck, which, from its nature and form of cicatrix, we cannot but regard as a soft, cellular node. With respect to the disease in the bones, we note, particularly, that it was attended with *little suppuration*, that we have distinct evidence of *those changes*, both in the living bone and in the sequestrum, so ably investigated and figured by Virchow, and so characteristic of the presence of the syphilitic as distinguished from the scrofulous element.

Dr. Houston then exhibited the specimen.

DR. J. MOORE congratulated Dr. Houston on his first paper being such an able one. He coincided with him in regarding the necrosis in his case as of syphilitic origin.

DR. J. W. BROWNE stated that, some years ago, he saw in hospital, under his father's care, a case in which "dry" necrosis of the frontal and parietal bones occurred in a young man, from a fall on the vertex, though he had no history of syphilis.

DR. J. FAGAN thought the necrosis might have been caused by an injury inflicted on the head when the patient was unconscious, perhaps from drink; and, accordingly, she would afterwards have no recollection of the occurrence when stating her history.

DR. J. J. CHARLES said the necrosis was most probably syphilitic, but he did not consider the facts which had been adduced by Dr. Houston

sufficient to make the diagnosis a matter of certainty, more especially as the history of the case pointed distinctly to struma as the cause. He thought a comparatively slight blow might produce necrosis in a strumous individual. He believed Virchow's views on this subject had not been sufficiently corroborated to place them beyond question. Indeed, he regarded it as very difficult, if not impossible, to state dogmatically, from the appearances of the parts alone, whether the disease was due to syphilis, struma, or a local injury.

The PRESIDENT coincided with Dr. Houston's opinion as to the origin of the necrosis. He referred to the case of a young man in whom necrosis of the bones of the cranial vertex resulted from struma.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT D. LYONS, M.D.

Secretary—E. H. BENNETT, M.D.

Fracture of the Tibia, with Extensive Laceration of the Integuments and Muscles.—MR. PORTER exhibited a leg which he had amputated on the previous day in the Meath Hospital. He said:—The subject of these injuries was a little boy twelve years of age. He was driving a baker's cart, and lost all control over the horse; the animal rushed upon the footpath, the cart was upset, and the boy's limb crushed underneath it. He was extricated with great difficulty, and brought to the Meath Hospital at eleven o'clock, a.m.; and at twelve o'clock I removed the limb, amputating through the condyles of the femur. He had lost a great deal of blood before he was brought to the hospital, but he was a brave little boy, and even previous to the arrival of his parents he consented to the amputation—seeing, from the terrible injuries he had sustained, that the operation was necessary. There was most extensive laceration of the soft parts; the tibia was broken across, but the fibula was uninjured. I thought the case was worth exhibiting as a good specimen of the terrible injuries which surgeons occasionally had to deal with, demanding immediate amputation of the crushed limb.—November 28, 1874.

Pachydermatocela, or Fibro-Molluscum.—MR. STOKES exhibited an instance of this disease, with several drawings and photographs of similar tumours. He said:—The morbid growth which I have the honour to submit to the Society is a tumour which I recently removed from the side and back part of the head of a patient who was under my care in the Richmond Hospital. It is an example of a very rare form of disease—one which has received the name of pachydermatocela from the late Professor Valentine Mott, of New York, and of fibro-molluscum from Virchow. I believe this example is the second one that has been exhibited at this Society. The first was exhibited many years ago by our late distinguished Secretary, Professor Robert William Smith, but unfortunately no record of that communication is to be found in the Proceedings of the Society. The patient from whom I removed this tumour is a well-nourished, tall, muscular, dark-complexioned man, of thirty-three years of age, a native of this country, but who has spent the

greater part of his life in the United States of America. He stated that at the early age of six years the tumour first appeared, and during twenty-seven years it increased gradually and slowly, until it assumed the enormous dimensions it had reached when he came to the Richmond Hospital. While in America he consulted several eminent surgeons, and some of them recommended operative proceedings, while others recommended that nothing should be done. He then determined to return to his native land, which he did, and he came under our observation in the Richmond Hospital. He also stated that the tumour never interfered in the slightest degree with his general health. He did not suffer any pain from it, and only suffered from a two-fold annoyance—one, the knowledge that he was the possessor of such a hideous deformity, and the other, the great weight of the tumour. The tumour was manifestly a benign one, and it was quite clear, from the general history of the case, and from the external character of the growth, that it was a well-marked example of the disease termed fibro-molluscum by Virchow, and pachydermatocele by Professor Valentine Mott. The base of the tumour was very wide; it extended from above and in front of the right ear to the left of the occipital protuberance, and extended upwards to the vertex of the head, and from that it descended as low as the shoulder. It was quite movable, free from morbid sensibility at any part, and the external surface of it was irregular, being covered with nodular masses, varying in size from a small bean to a walnut. There was no discoloration of the tumour, and it was thickly covered with dark hair, which was removed previous to operation. Before determining to perform any operation, there were two circumstances which caused me to hesitate—one was the fear that this large mass was overlying bones more or less eroded; the other, that probably several vessels of large calibre would have to be divided, the hæmorrhage from which would be so great as to endanger the patient's life. However, on making a careful examination of the tumour, in which I was assisted not only by my colleagues, but by my friend, Mr. Porter, we determined that erosion of the bones had not occurred, nor could we determine the existence of any specially large vessels going to feed this enormous mass. Under these circumstances, I resolved to perform the operation, not only from the absence of those two features, which would have contra-indicated it, but from a knowledge of the fact that in many of these cases, especially in those recorded by the late Professor Valentine Mott, the operation was attended, in the majority of instances, with good results. In three of his five cases the operation was attended with excellent results; in the fourth the patient died soon after the operation; and in the fifth there was a rapid return of the tumour. In the remarkable case which Virchow looked on as of so much importance that he has selected a drawing of it as the frontispiece of his great work on Tumours, the removal was attended with satisfactory

results, seven years having elapsed without any return of the disease. This is not the place to enter on any description of the different steps of the operation—suffice it to say that we found no morbid condition of the bones such as we had dreaded at first, and that although there were no specially large vessels to be divided, the hæmorrhage from the numerous vessels which existed was so great that I may describe it as terrific. Whether from that cause or the action of chloroform, the patient got into a condition which caused us the greatest alarm—he was, in truth, to all appearances, dead. The respiration ceased, the pulse ceased, the face assumed a cadaveric hue, the eye became glazed, and he was, to all intents and purposes, dead. Under these circumstances we had recourse to the plan of the late Professor Nélaton, in which I was assisted by my friend, Professor Bennett, who aided me during the performance of the operation, and the effect of it was almost magical—the patient became resuscitated almost immediately, and I was enabled to complete the operation. Since that time the patient has gone on remarkably well, nothing untoward has occurred; and on the seventh day after the removal of the tumour, he was able to leave his bed and walk about the ward. With reference to the minute pathology of this tumour, there is but little to say. It is not a new growth—it is nothing more than an excessive hypertrophy of the skin and cellular tissue, attaining enormous dimensions. This was the result of the various microscopic examinations made on behalf of the late Professor Valentine Mott, and of the examinations of the tissue of this tumour, which were made for me in the College of Surgeons. It is remarkable how few cases of this kind have been recorded. The first of these was recorded by Mr. John Bell. He does not give any special name to the tumour, but gives a description of it in the chapter on the unlimited growth of tumours. His book contains a drawing of a case which occurred, in 1815, in his practice. The patient was a native of this country, but it differed from my case and others in having, as was alleged, a traumatic origin. The woman was on her way home from America, when the ship was struck by lightning, and in the confusion which ensued she received a blow, fell upon her head, and was insensible for some time. Afterwards a tumour appeared on her head, and grew to an enormous size within twelve months.

She consulted the surgeons of Guy's Hospital, who declined to interfere, and then she put herself under the care of the illustrious Surgeon Desault, at the Hotel Dieu. He removed the tumour, but it grew again, and no surgeon afterwards interfered with it; and the drawing in Bell's book represented its condition some years after Desault's operation, the cicatrices of which were to be seen. The two drawings in the work of Professor Valentine Mott present similar appearances to those in the case of John Bell. I am indebted to the kindness of my colleague,

Mr. Hamilton, of the Richmond Hospital, for photographs of a case which was in St. George's Hospital, under the care of Mr. Pollock, the well-known surgeon of that institution. This case was not dealt with by the knife, the enormous tumour which you see in the photograph having been removed by ligature. I should have preferred the ligature, were it possible of application, but the idea of using the ligature where the base of the tumour was so very wide, was altogether out of the question, and the only possible plan of operation was its removal by the knife. These are the principal points connected with this remarkable case—the second ever laid before this Society, and the first that will be recorded in its Proceedings.—*November 28, 1874.*

Nasal Polypus.—DR. BIGGER said:—My friend, Mr. Stokes, has just shown you an unlimited tumour, which might grow to an enormous size without doing much mischief. I have now to show you a tumour limited by position, but which very nearly produced death. My colleague, Dr. Duncan, had the man from whom this tumour was removed under his care, and was treating him for bronchitis. The patient, however, concealed the fact of the disease under which he was suffering. A short history of his life is necessary to the understanding of the case. He was an attorney, at one time in good practice, but had given up his time to the Marquis of Downshire, working on his estate for the benefit of his people, drawing up leases, and doing other legal business. He lived a healthy life, not being much confined to office work, but having a good deal of out-door business. Thirty-five years ago, he first felt a slight irritation in his nose. At that period a surgeon of eminence visited the Marquis, and the latter mentioned the circumstance that this man was always snuffling, and asked the surgeon to see him. He did so, and said the cause of the affection was a small polypus, which could be removed in a minute. He introduced a forceps, and got hold of something which he pulled away, but without satisfying himself that he had removed the entire of it. A good deal of blood was lost, and the man was so frightened that he determined to bear his misfortune rather than have any further interference. He went on for ten years very well, and at the end of that time one of his nostrils became stopped. He applied to Surgeon Adams, who removed the portion obstructing the nostril, and he was surprised at the very small base it had. There was a considerable amount of bleeding, but it was thought all was well, and the patient returned to the country. From that moment a new tumour seemed to arise, and its progress was so rapid that it plugged both nostrils, filled every cavity in the nostrils, and projected backwards and downwards, forming a large pharyngeal tumour. He could swallow nothing, except the finest minced meat. He could not lie, sleep, or breathe; and, in fact, he dreaded falling into slumber, for the fear of being choked was always

weighing on his mind, and he hardly closed his eyes in slumber when he wakened up again. His life, in short, was rendered perfectly miserable. Falling into poverty, he was admitted into Simpson's Hospital, where he remained for some few months without saying anything of his disease. He coughed a good deal, and the other patients complained of the noise he made by his difficult breathing. Dr. Duncan saw that his case was surgical, and handed him over to me. On examining the throat I found the palate was pushed forward; the uvula was projecting, and was as large as a cherry, and very tense; behind that, there was a large body which filled the space behind the palate, thrusting forward its arches, and then the tumour pressed backwards. I do not think I ever saw such beautiful moulds made of almost every cavity of the nose as I find here—every spongy bone can be traced in this tumour as if it were formed in wax. I cannot help introducing a little surgery here, in spite of its being contrary to our rule, but it is necessary to the explanation of the case. I tried if I could approach any of the parts from the nose backwards—that was impossible. I could only get a small probe down through the left nostril. There was nothing for it but operation, and when this was told to the patient, he said—"I have refused it so long that I am ashamed to consent now." In contemplating how to remove it, I saw great difficulty. I did not know where the base of it was, or how large it might be, and I made up my mind to consult with my friend, Mr. Porter, before proceeding to operate. However, I was suddenly summoned to the hospital, and obliged to act on my own resources. I furnished myself with Chassaignac's instruments, and others, so that I might remove the tumour and restore breathing. I had him raised in bed, with a strong man behind him to provide against the contingency of blood flowing into the larynx. I applied Luer's ecraseur, and got the wire round the tumour, which was hanging into the pharynx, and screwed it gradually, until I had reduced the loop to a small size. I kept the man for a quarter of an hour in this state, when a crack was heard, and, with a very slight effort on the instrument, withdrawing it gently, the whole tumour dashed out on the bed. It was four times as large as it is now, having contracted in the spirit. One portion of the depending tumour lay upon the epiglottis, and was darkly-coloured and vascular; the rest accurately filled the pharynx and all the nasal cavities. The tumour was in close approximation to all the surfaces, but was free of adhesion or attachment to any part except to the posterior angle of the middle spongy bone, a small shell of which, about one-eighth of an inch in diameter, came away with the extremity of the pedicle, causing the crack heard in the operation. The patient is now perfectly restored to health and comfort.—*November 28, 1874.*

Limited Pulmonary Emphysema, causing Abnormal Stethoscopic Phenomena.—DR. NIXON exhibited morbid specimens taken from the body of a man, sixty-four years of age, who died on the 6th of November last, in the Mater Misericordiæ Hospital. He presented, when admitted, the appearance of a man suffering from Bright's disease. There was well-marked dropsy—the characteristic Bright's eye and anæmia. The urine was passed in quantity up to forty ounces in the twenty-four hours; it was albuminous, and, under microscopic examination, was found to contain granular tube casts. His lungs were emphysematous; he had the barrel-shaped chest peculiar to that condition, and bronchitic râles were heard both in front and behind. There was an increase of cardiac dulness, and an impulse beat in the epigastrium. On listening at the usual site of the impulse beat, just below the nipple, I detected a very soft, post-systolic murmur. This murmur altered in intensity, being sometimes well, and at other times not so well pronounced. It struck me that it was possibly a functional murmur, and I asked the man to walk rapidly through the ward; when he came back I found the murmur had disappeared. This phenomenon I observed frequently. Some three weeks before the patient's death, on listening over the heart, I heard a peculiar dry, creaking sound, and it struck me at first that the man had pericarditis. The characteristics of this creaking sound were, that it was most audible at the end of expiration—sometimes heard during inspiration and expiration, but most marked when the patient held his breath; that the sound disappeared after two or three violent coughs; that it accompanied the movements of the heart, and not the respiratory movements; and that it was localised to an area of an inch square, corresponding to the junction of the fourth left costal cartilage with the sternum.

In accounting for the production of this murmur, I suggested that it might be caused by one of two circumstances—either that it was due to bands of lymph passing between the pericardium and that portion of the pleura which overlapped it, creating a pericardial pleural friction sound, or that it was due to an oedematous portion of the lung overlapping the heart. I made this suggestion from having had under my care some time previously a case of pleural effusion, in which, on the right side, corresponding to the fifth costal cartilage, a localised spot of semi-crepitant râles existed. This disappeared, and I came to the conclusion that it was due to oedema of the lung from collateral hyperæmia. In the present case the sound existed to within a couple of days of the patient's death. He finally got one of those forms of delirium common in Bright's disease; he refused medicine and food; his pulse became weak and irregular; and he died on the 6th of November. The kidney presented the appearances of the fatty form of Bright's disease. The capsule peeled off with great facility—the gland was pale and lobulated on the surface.

I was inclined to think this was a case in which there was pleurisy;

however, on removing the sternum, I found that the pleura was perfectly normal; but the first thing that struck my eye was a peculiar lobular portion of lung overlapping the heart, and corresponding to the situation of the peculiar creaking sound. The lobe was white in colour and intensely emphysematous. The left side of the heart was hypertrophied; the edge of the mitral valve was normal; but corresponding to the auricular portion of the posterior flap of the valve there was a small bead of lymph. The two points of interest in this case were—the development of the systolic murmur, and the production of the dry extra-pericardiac creaking sound. I think, from the appearance of the mitral valve, that the murmur did not depend on any organic disease. It would have been pre-systolic, and not post-systolic, had the murmurs been due to the deposit on the valve. With reference to extra pericarditic sounds, I find there are three conditions described as productive of them. Firstly, an extra pericarditic sound might be due to the occurrence of bands of lymph passing from the pericardium to that portion of the lung that overlapped it, a condition first described by Addison, and afterwards by Dr. Stokes; secondly, it might be caused by the pressure of a lung consolidated by tubercular disease; and, thirdly, an extra pericarditic sound had been developed by cavities with thick walls in that portion of the lung that overlapped the heart.

So far as I am aware, this specimen is unique; but whether it is a congenital malformation of the lung, or produced by disease, I cannot say. It occurred to me that the production of the extra-pericardiac sound might be accounted for in this way. This being the most depending portion of the lung, fluids would tend to accumulate there, and would fill the upper portion of the lobulated mass—so that when it was distended, the heart tilting against it would displace some of the thick, mucoid fluid, and give rise to this crepitating sound.—*December 5, 1874.*

Aneurism of the Thoracic Aorta.—DR. GORDON said:—This specimen was taken from the body of a man, thirty-six years of age, who was six months under our observation. He had been an extern patient of Dr. Yeo's, at the Whitworth Hospital, and then passed into my wards, where he remained nearly two months. He came into hospital with cough, difficulty of breathing, and high fever. There was very little trouble in making a diagnosis that he was suffering from an acute attack of inflammation of the upper portion of the right lung, and we came to the conclusion that this was owing to an aneurismal tumour pressing on that locality; for, in addition to the usual physical signs of an inflamed lung, he had a pulsating tumour under the right clavicle. On further examination it appeared that the venous system in the upper part of the body was pressed on. He had considerable effusion into the cellular tissue in the upper part of the body, particularly at both sides of the neck, so as to

obliterate the spaces usually found in those regions. He had also an enlarged and varicose condition of the small veins in the upper part of the chest, and had a sensible difference in the pulse of the two wrists, the right being the stronger. Under treatment this condition of the lung subsided—indeed, was entirely removed. The physical signs of pneumonia completely disappeared, the pulsation under the right collar-bone continued for a little longer, and gradually disappeared. After a time there was no longer any evidence of a tumour in this situation. Along with the subsidence of the tumour in this locality, he was seized with a much more distressing symptom. He had now constant dyspnoea, and this occasionally in the evenings amounted to orthopnoea, and he passed completely sleepless nights. It was found that the right bronchial tube was considerably pressed upon, and that his dyspnoea was most probably owing to that cause. Shortly afterwards he got that peculiar loud ringing cough, with which we are so familiar in intra-thoracic tumours, where the recurrent nerves are pressed upon. These, then, were the symptoms—the well-marked appearance of the aneurismal tumour at first, the total disappearance of it, and then evidence of the tumour in other localities; for, in addition to pressure on the right bronchial tube, there was dulness over the chest, at least to the extent of the upper two-thirds. One sign, however, persisted, which led those who examined him, and were cognisant of the existence of the aneurismal tumour, to suspect that, although the pulsation had disappeared, the aneurismal tumour was still in that locality; for we had, well-marked in its place, two sounds similar to those of the heart—these disappearing as you passed from that locality to the heart, and again being well-marked over the cardiac region. The case would probably not have been so clear of diagnosis at the later stage; but, having seen it when the pulsating tumour was so plain, there was no great difficulty of diagnosis afterwards. The tumour appeared to continue to increase, the pressure on the lung and the recurrent nerves increased, and the patient died asphyxiated after forty-eight hours of excessive suffering. On examining the tumour, the first thing remarkable was its very large size. The disappearance of the pulsation below the right clavicle appears to have been due to the tumour having consolidated, the channel left for the current of blood becoming, in consequence, very small. Dr. Yeo, who had examined it with very great care, says that the quantity of solid matter in the tumour was very large indeed. The tumour pressed on the trachea and the right bronchial tube; the amount of pressure on the venous system appears to have been very great. We find that the origin of the tumour is very close to the root of the aorta. The aorta is considerably diseased, and the current goes almost directly into the innominate, which appears to be spread out to a very large extent. The right auricle is reduced to a very small size, and there is almost a complete stoppage

when we pass to the superior cava; and, on examining the cava from above, we see it is spread out into a large cavity, just above where it is stopped by the pressure of the tumour on it. The man did not suffer much pain in the chest, although the sternum is considerably eroded; but he did suffer considerably from nervous pains—pains shooting along the nerves up the shoulder and the neck.—*December 5, 1874.*

Cerebro-Spinal Meningitis.—DR. E. H. BENNETT presented a specimen of cerebro-spinal meningitis. He said:—The brain and portion of the spinal cord on the table were taken this day from the body of a man who died yesterday, the 4th December, having been admitted to Sir Patrick Dun's Hospital on the 2nd. He was a Russian Finn, a mate on board a vessel in the river. The captain of the vessel brought him in a cab to the hospital, just as I was leaving it on the morning of the 2nd. From the account given at the time by the captain, I was led to believe that the condition of the man was not a serious one, and, accordingly, I left the matter entirely in the hands of the resident pupil, without going to see the patient myself. The captain said that the principal trouble the man suffered from was a pain in the ear. Shortly after he was admitted the resident pupil sent for me. I went at once to the hospital, and found the man lying perfectly insensible in bed, rolling about so violently that it required two or three people to prevent him from rolling out on the floor, never making use of any words, and clearly not recognising light or the hand placed upon him. There was no hyperæsthesia of the surface; and although he grasped the hand when placed in his, he seemed to do so without any consciousness that he was grasping it. The pupils were extremely contracted, the pulse 72, and the respirations 38. The only previous history which could be obtained was, that at four o'clock on that morning he fell into the condition in which he was when brought to hospital, having been in perfect good health before—a robust, able-bodied man. It was stated that fifteen months previously he had fallen on the deck and hurt his head, and that afterwards he complained on and off of pain in his right ear, and recently he had been under treatment, in the various ports which he visited, for pain and distress in the ear. So persistently did the history of the case point to the petrous portion of the temporal bone as the seat of disease, that I examined carefully the meatus, but there was no discharge, or anything abnormal about it. I was, however, forced to conclude that there existed disease of the temporal bone, resulting either from injury or disease of the ear, and that implication of the brain had followed. As he lay in bed in the intervals of quiet, there was a further feature of the case that directed attention to the ear. He insisted on lying on his right side. If it was attempted to put him in any other position—as was necessary, for instance, in order to shave his head—he struggled violently

back to the right side. These were familiar symptoms in cases of encephalitis, springing from disease of the petrous portion of the temporal bone. There was also a feature of some importance—namely, the want of harmony between the respiration and the pulse, which was 38 to 74. On examining the neck, there was no excessive pulsation of the carotid vessels to be seen or felt. None of the arteries of the head and neck exhibited any abnormal pulsation, but the external jugular veins pulsated most distinctly. Although this has been observed in cases of cerebro-spinal meningitis and hydrocephalus, it was so dissociated from the excited action of the arteries seen in those diseases, that it suggested the examination of the chest to search for cardiac disease. I asked the captain the next day whether the man had had any difficulty of breathing, or chest complaint, but he said that he never had any such symptom; he was one of the most active, able-bodied, and most reliable of his seamen. I looked carefully for any eruption, but found none. On examining the body after death, the skin of the feet and legs showed, to a slight degree, a blue tinge similar to that observed in cerebro-spinal meningitis, but it was not very characteristic. No observation of temperature was taken during life, as the man's violence was so great as to make it difficult, and any handling increased his violence. He could swallow when fluid was put into his mouth; he admitted but little, and generally ejected it, as a sailor who chews tobacco does saliva, through lips nearly closed. In making the *post-mortem* examination, I opened the head with care. Considering the injury to the head, which happened fifteen months before, the history of pain in the ear and of treatment of it, and, lastly, the decubitus, I expected to find either a carious temporal bone, or some evidence of disease due to the injury.

On reflecting the dura mater, the brain was found to be injected—its vessels, as well as those of dura mater, full of blood. The surface of the arachnoid was dry and sticky. The brain had evidently been compressed by an excess of the cranial contents; its surface was slightly flattened. The sulci passing up the lateral aspects of the hemispheres from the fissura Sylvii were filled with greenish exudation, which formed a bed for the blood-vessels. The quantity of this exudation was greatest where the sulci issued from the fissure, and it diminished as they passed up to the vertex—here the eye could barely trace a fine line on each side of the large vessels.

Turning to the base, I found, as the specimen still distinctly shows, the mesian sub-arachnoid space filled with green lymph; this conceals the vessels, and is continuous with a copious deposit on the pons Varolii. Again, the mesian fissure of the cerebellum, and the recess about the medulla oblongata, are filled with this lymph. It could be traced down the cord; and, as the section of this structure was made to remove the

brain, a great flow of turbid, almost purulent, fluid escaped from the spinal canal. The tissue of the brain is firm, and its vessels full of blood. The ventricles contained each a small amount of turbid serum.

As the man's death approached—for it was clear, from the time of his admission, that he was going to die—the chest became slightly dull towards the lower and back part, and crepitus, so far as could be determined with the violence of his action and forced respiration, could be heard over the chest. It was clear that a great amount of lung congestion had taken place. The left lung lying on the table exhibits a degree of congestion characteristic of the first stage of pneumonia. The opposite lung was in a similar condition, except only that it was entirely adherent from an attack of pleuritis at some remote period. I do not think I have ever examined a more completely healthy heart. There is an entire absence of any condition that would cause venous pulsation. I have carefully examined both ears; I, with care, stripped off the entire of the dura mater off the surface of the bone, and examined the lateral sinuses with care, and in none of these positions was there any disease. The bones and cavities of the ears are healthy, and there is no evidence of any origin for the disease in either ear, nor is there any trace of former injury. The urine contained in the bladder after death was found to be loaded with albumen. None could be obtained during life, as he passed it in bed. Considering, therefore, the pathological changes present, and the entire absence of any disease of the petrous bone, or of the other parts of the skull, I conclude that this is an instance of cerebro-spinal meningitis, of the same kind as that with which we were so familiar during the epidemic of 1867, and of which there have been so many instances submitted to this Society.—*December 5, 1874.*

Renal Disease.—DR. QUINLAN exhibited two kidneys which he had removed from a patient admitted on the previous Monday morning into St. Vincent's Hospital. He gave the following account of the case:—This patient, a woman, aged twenty, came to hospital, not seeking admission, but asking to be prescribed for. Seeing that she was extremely ill, I recommended that she should be taken into hospital, which was accordingly done. She was in a state of great exhaustion and depression. Her feet and legs were much swollen, and her body, upper extremities, and face, were also swelled to a slight degree. Her friends, who accompanied her to the hospital, stated that she had had several similar attacks before. She had rallied out of them, but they had recurred, getting worse and worse, and had left her in the weak and exhausted condition in which she then was. She was taken into hospital, placed in bed, and everything that was possible was done for her relief. A specimen of her urine was found to be very albuminous, and to contain large deposits, consisting of uriniferous tube-casts, along with

a quantity of spheroidal epithelium. On Tuesday she continued so exhausted as to require the exhibition of a moderate quantity of stimulants; on Wednesday symptoms of uræmic poisoning came on; and on Thursday she died. A *post-mortem* examination was made twenty-four hours after death. All the organs were examined, but attention was directed particularly to the kidneys. The heart was healthy. The kidneys presented a very interesting appearance, completely explanatory of the state she was in. This appearance was shown in both kidneys, but particularly in the left. In places that kidney was quite healthy, but in other portions there was a good deal of congestion, and the injection of the blood-vessels was well marked, and a great part of the kidney was completely disorganised by the Bright's disease. Similar appearances, in a more modified form, were presented in the right kidney. Thus the two operations were seen going on concurrently—the acute attack of nephritis for which she came into hospital, and which was similar to three or four attacks which she had had previously, as described by her friends; and also that form of Bright's disease, which was the result of those acute attacks, and by means of which the active secreting part of the kidneys was gradually diminished. Each attack left a corresponding extent of disease behind it, and when she came into hospital, the quantity of healthy kidney remaining being unable to carry on the functions of nature, the result was death by uræmic poisoning.—*December 5, 1874.*

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PART I.

ORIGINAL COMMUNICATIONS.

ART. III.—*On the Excretion of Nitrogen in the Urine.* By J. BYRNE POWER, L.K. & Q.C.P.I.; L.R.C.S.I.; Physician to St. Michael's Hospital, Kingstown; Physician to the Hospital for Sick Children, Buckingham-street; Demonstrator of Anatomy, Carmichael School of Medicine, &c.

IN a paper read by my friend, Dr. J. Emerson Reynolds, before the Surgical Society of Ireland last year,* he, for the first time, I believe, pointed out the importance of estimating the total nitrogen in the urine, and explained his mode of analysis. The matter up to the present not having met with the attention it deserves—and further, as I found the accurate estimation of the total nitrogen excreted by the kidneys a necessary datum in some investigations in which I am engaged—I determined, by a series of experiments, to arrive at a correct estimation of this important quantity, and, if possible, to establish a ratio between it and the amount of nitrogen excreted as urea—a ratio which I am inclined to think has hitherto been looked on as almost constant under normal circumstances, since the quantity excreted as urea has been taken, if not as an absolute, at least as a relative measure of the entire nitrogenous urinary excretion resulting from waste of animal tissue. In the following paper I will make use of the term residual nitrogen, employed by

* See Medical Press and Circular. Vol. XVII., p. 402.

Dr. Reynolds to signify the nitrogen present in the urine otherwise than as urea. I am engaged in carrying my investigations into the domain of pathology, but am not at present prepared to set forth my results in this direction, though I have already made several experiments with this view on morbid urines. The practical difficulties in the way of such analysis of urine as I propose are considerable, and may, perhaps, account for the fact that since the appearance of Dr. Reynolds' valuable paper, nothing further has been published upon the matter. In the first place, the *accurate* quantitative determination of urea is no easy matter. For this purpose I adopted Liebig's mercurial process, all others giving but approximate results. Analyses of urine, according to Liebig's *original* process, do not give satisfactory results, owing to the difficulty of determining the exact point at which the mercuric nitrate has decomposed all the chlorides and commences to precipitate the urea—a fact well known to those accustomed to urinary analysis.

The difficulty often experienced in ascertaining with precision the point of precipitation of urea by the mercuric nitrate, has even led to the adoption of an exceedingly unreliable plan, founded on the assumption that the quantity of the chlorides in the urine varies directly as its specific gravity. I have good reason to doubt the truth of this assumption, as, in one of my experiments upon morbid urine, I found that the fluid having a specific gravity of 1028 did not contain more than a trace of chlorides. The only certain method is, to determine the chlorides by some independent process. After many trials, I was obliged to abandon the ordinary method of determining the quantity of chlorides present in a solution, by means of argentic nitrate, owing to the difficulty of ascertaining, in the case of urine, the exact point at which precipitation ceased, and in this was fully borne out by the more extensive experience of Dr. Reynolds. I therefore adopted a method originated by Dr. Reynolds, which I find gives most accurate results, and of which the following is an example:—Carefully measure into a porcelain crucible two cubic centimetres of the urine under examination; add a small quantity of chalk, perfectly free from chlorine, and evaporate to dryness on the water-bath. Heat the crucible to low redness, avoiding a higher temperature, as this would cause the sodium chloride to volatilise. Wash out the crucible first with pure dilute nitric acid, and then with distilled water, into a measured flask. Now, in order to precipitate the chlorides, add a measured quantity

of argentic nitrate solution. In my experiments I used twenty cubic centimetres of a solution of argentic nitrate, each cubic centimetre of which is capable of throwing down the chlorine from '00171 gramme of sodium chloride. The effect of this addition is to precipitate the whole of the chlorides as argentic chloride. The excess of argentic nitrate, beyond the quantity actually used in precipitation, then remains in solution. It is rare to meet with a specimen of urine which contains more chlorine in two cubic centimetres than can be precipitated by the twenty cubic centimetres of the silver solution above referred to. Having added the argentic nitrate, dilute with distilled water up to 100 cubic centimetres. Shake well and allow the turbid mixture to stand for a short time; filter carefully through a washed filter of Swedish paper, rejecting the first twenty cubic centimetres or so. Then measure twenty-five cubic centimetres into an evaporating-dish, and having added a small quantity of the chalk, free from chlorine, place it under a burette containing a standard solution of iodide of starch (7·5 cubic centimetres of the solution I use is equivalent to 1 cubic centimetre of my silver solution), and determine the quantity of free argentic nitrate by the amount of blue iodide of starch decolorised. Deduct the ascertained quantity of free argentic nitrate from the amount added in the first instance, and the remainder represents the portion of argentic nitrate precipitated by the chlorides present.* Having a carefully prepared solution of mercuric nitrate standardised for both chlorides and urea, we can now allow, with certainty, for the amount of chlorides present in the urine under examination, and thus determine, with great accuracy, the quantity of urea.

I thought at first that it would be sufficient, at least for the purposes of comparison, to analyse the urine passed at a certain hour each day, but I abandoned that plan, as I found that the quantity of the various constituents of the urine, even when taken at a fixed hour each day, differed so much, that no reliable conclusions could be founded upon such analysis; I therefore collected all the urine excreted each day, and analysed a sample of it. The following Table contains the results of eleven carefully-conducted experiments made during the months of October and November last year—the weight of the person being 129·5 lbs., and condition of health good:—

* For details of this process, and its application to water analysis, see chapter by Dr. Reynolds in "Manual of Public Health for Ireland," p. 235.

TABLE.

No. of Experiment	Date when collected	Total daily Excretion in cubic centimtrs.	Urea in grammes	Nitrogen as Urea	Total Nitrogen in grammes	Residual Nitrogen in grammes	Ratio of Residual to total Nitrogen
1	October 30th	1703	28·	13·06	14·	·94	$\frac{1}{15}$
2	November 13th	1775	23·3	10·87	11·6	·77	$\frac{1}{15}$
3	„ 16th	2384	30·5	14·23	15·6	1·44	$\frac{1}{11}$
4	„ 17th	1292	30·1	14·04	14·8	·8	$\frac{1}{16}$
5	„ 18th	2045	30·1	14·04	16·8	2·76	$\frac{1}{6}$
6	„ 20th	1207	25·	11·6	12·9	1·24	$\frac{1}{10}$
7	„ 21st	1633	27·3	12·72	13·4	·7	$\frac{1}{16}$
8	„ 24th	1618	32·3	15·3	17·3	2·01	$\frac{1}{8}$
9	„ 25th	2130	28·4	13·25	14·	·74	$\frac{1}{16}$
10	„ 27th	1108	25·5	11·9	13·6	1·74	$\frac{1}{8}$
11	„ 28th	1477	26·9	12·55	14·5	2·	$\frac{1}{7}$

The total nitrogen in the above Table was obtained by the process described in Dr. Reynolds' paper already mentioned.

On reference to the Table, it will be seen that the amount of residual nitrogen is, on the whole, considerable; in experiment 5 amounting to $\frac{1}{6}$ th of the total nitrogen, and it will also be seen that this proportion is extremely variable, as in experiments 7 and 9 it only amounts to $\frac{1}{16}$ th. This shows that the amount of residual nitrogen is considerable absolutely; and relatively (to the total nitrogen) so variable, that I contend that urea cannot be taken as a correct measure of the total nitrogen excreted by the kidneys either absolutely or relatively. If I be correct in this view, it may to some extent explain the curiously conflicting results obtained by the careful experiments of different most competent inquirers as to the effect of exercise, diet, &c., on the excretion of nitrogen by the kidneys. My experiments were made upon the same individual under normal circumstances. I have no doubt that with other persons and under other conditions a much greater amount of residual nitrogen might be obtained. An extended series of experiments would be necessary to ascertain the influence of temperament, &c., on this portion of the nitrogenous excretion.

As to the influence of change of condition, I find, on reference

to Dr. Austin Flint's paper,^a that, according to his analysis, the amount of uric acid is much increased by exercise. It is well known that in some of the lower animals low nitrogenous compounds more or less replace urea, and that such an interchange also takes place in the human subject, under certain conditions, I think can hardly be doubted. I believe that I am correct in saying that up to the present time there has been invented no process by which the amount of nitrogenous compounds other than urea can be determined with accuracy,^b and we must therefore have recourse to the total nitrogen process if we wish to estimate the exact amount of effete nitrogenous matter eliminated by the kidneys.

In conclusion, I have to thank my friend, Dr. Reynolds, of whose kind and able assistance I have largely availed myself, and who has been the pioneer in this as well as in many other most important researches in physiological chemistry.

ART. IV.—*Excision of the Head of the Right Humerus for Caries, the result of an injury.* By SURGEON-MAJOR J. H. PORTER, Assistant Professor of Military Surgery, Army Medical School, Netley.

PRIVATE H. M., first battalion, 20th Regiment, aged twenty-one years, three years service, nine months of which he passed in Bermuda, early in 1871 received a blow from a broom-handle on the right shoulder, which caused him severe pain, and from which he frequently suffered afterwards. In July, 1873, while employed on the public works at Bermuda, he experienced a severe fall on the same shoulder, which was soon followed by inflammation and suppuration. An abscess formed in, or in the immediate neighbourhood of, the joint, which was opened in the month of November, on board ship, while the patient was *en route* to England.

On arrival at Netley, December 1st, he was in a pale, emaciated condition, with countenance expressive of pain and anxiety, temperature 102° Fahr., pulse 105, and was suffering from profuse nocturnal perspirations. The right shoulder was flattened, and presented the appearance of a dislocation of the head of the humerus

^a New York Medical Journal. June, 1871.

^b Compare E. Salkowski, *Pflüger's Archiv.* V., p. 210. H. Schwanert, *Ann. Chem. und Pharm.* CLXIII., p. 153. R. Malz, *Pflüger's Archiv.* VI., p. 201.

forward. There was a sinus at the inner edge of the biceps, from which flowed a copious discharge of healthy pus. A probe could be passed through the sinus to the acromion process, but no bone could be felt. It was evident, however, that the head of the humerus was displaced and diseased. All interference with the arm caused intense pain in the shoulder. His health being indifferent, and there being congestion of the upper portion of the right lung, operative measures were not adopted till the 1st of January, 1874, when I performed excision of the head of the humerus by a vertical incision of about five inches in length, extending from a point midway between the acromion and coracoid processes, down the arm, parallel to the fibres of the deltoid muscle. The capsule of the joint and long head of the biceps were found to be extensively diseased, and the head of the bone in an advanced state of caries. Two inches of bone were removed by Butcher's saw. There was but little hæmorrhage. The wound was dressed from the bottom with lint saturated with a weak solution of carbolic acid; a conical pad was placed in the axilla to prevent the end of the bone pressing inwards; and the forearm was carried across the body supported by a sling. As soon as the inflammation consequent on the operation had subsided, passive motion was commenced by gently moving the elbow backwards and forwards for two or three minutes daily.

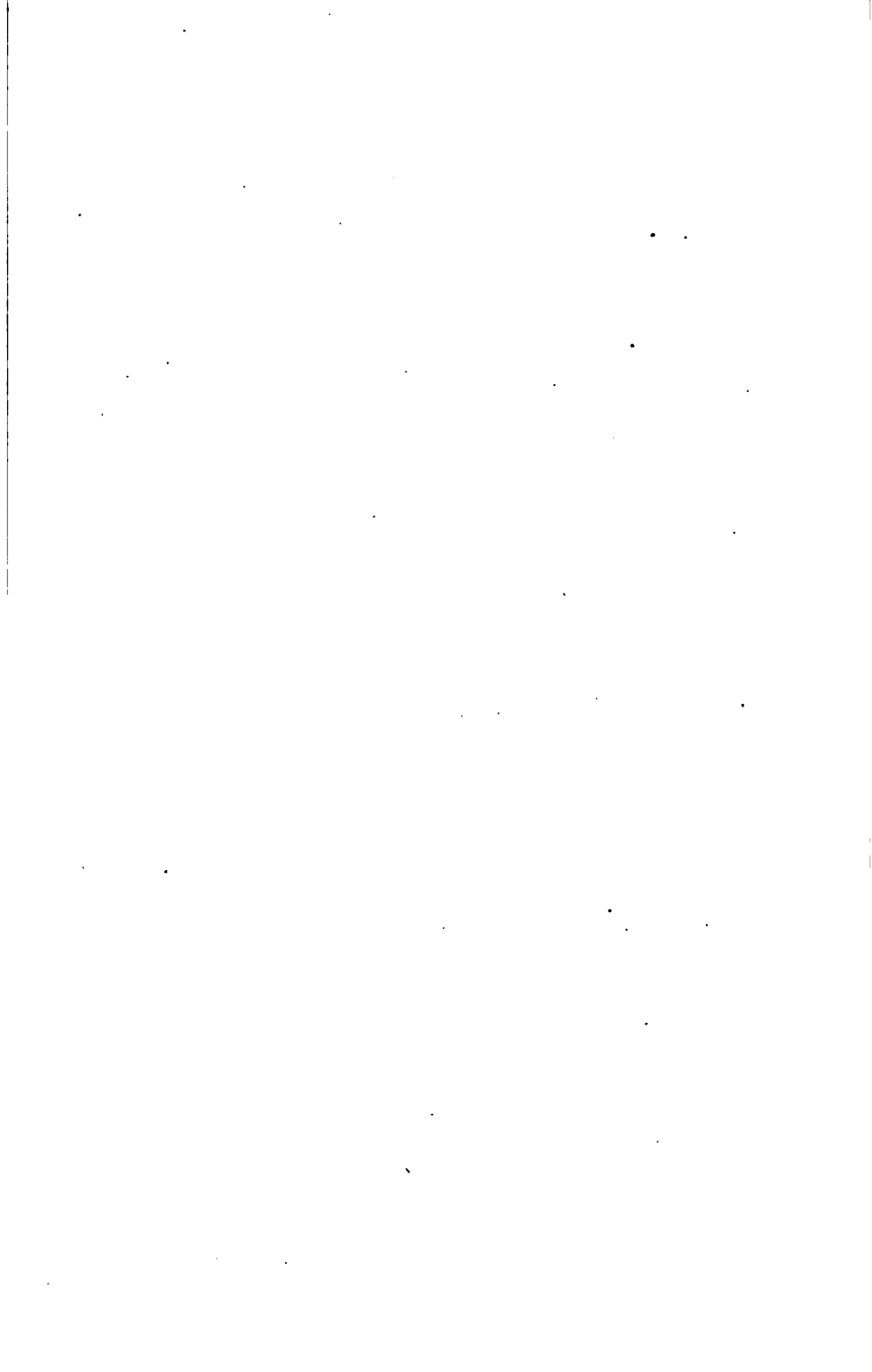
The process of recovery was very slow. Numerous abscesses formed at the seat of operation, and in June he suffered from a severe attack of phlegmonous erysipelas, during which a deep incision was made in the back of the arm. Through this opening the discharge of pus was encouraged, the front wound being allowed to close, and after this he rapidly improved. When he was able to walk about unsupported he used a long-handled sweeping-brush, and daily for about five minutes swept the floor. This motion is, perhaps, about the best that can be adopted to assist in the formation of a new shoulder-joint.

The illustration, copied from a photograph kindly taken by Surgeon G. E. Dobson, A.M.D., nine months after the operation, may assist in showing what the patient can do with the new joint. With the exception of abduction, he can move it about in every direction. He can use a fork or spoon to assist in passing food to his mouth, can brush his hair, place his hand at the back or top of his head or on the opposite shoulder, and can carry the forearm across the back. He can also "present" a rifle from the right shoulder, as shown in the illustration. During the course of



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SURGEON-MAJOR PORTER'S CASE OF EXCISION OF SHOULDER.



treatment, the galvanic current was applied over the deltoid muscle, and with much advantage.

There is one point in excision of the shoulder which I should like to bring to the notice of the profession, and that is the advisability of completing the operation (when the front vertical incision is selected), by forming an aperture at the back of the arm for the egress of discharge, by passing a scalpel or bistoury through the soft parts, on a level with the upper end of the humerus, then to pass a drainage tube or piece of lint through it, and allow the anterior incision to close. In the foregoing case, and in another which has lately been under my care, I found the pus collected in the anterior wound in consequence of there being no outlet behind; and as patients who suffer this operation rest a good deal at first in the recumbent position, an outlet behind must favour the healing process and prevent burrowing.

ART. V.—*Notes from Surgical Practice.* By CHARLES B. BALL, M.B., Ch.M., Univ. Dubl.; Surgeon to the Blaenavon Iron Works; District Medical Officer, Abergavenny Union; Medical Officer of Health, &c.

- I.—DEPRESSED FRACTURE OF SKULL—ELEVATION—PYÆMIA—RECOVERY.
- II.—FRACTURE OF THE BASE OF THE SKULL BY FORCE COMMUNICATED THROUGH THE LOWER JAW, WITH IMPACTION OF THE CONDYLE—RECOVERY.
- III.—UNUSUAL FRACTURE OF THE BASE OF THE SKULL, WITH OBSERVATIONS.
- IV.—IMPLICATION OF THE NUTRIENT ARTERY OF THE TIBIA IN A CASE OF COMPOUND FRACTURE OF THE LEG.
- V.—SPONTANEOUS FRACTURE OF THE FEMUR IN NECROSIS—AMPUTATION—RECOVERY.
- VI.—CASE OF SPINA BIFIDA TREATED WITH THE ASPIRATOR AND ELASTIC LIGATURE—DEATH ON THE 14TH DAY.

CASE I.—*Depressed Fracture of Skull; Elevation; Pyæmia; Recovery.*

CHARLES M., aged thirty-four years, labourer, was returning home on November 19th, 1873, in a state of intoxication. As he was walking along a mountain path he fell and rolled down a steep bank for about 100 yards, after which he had a clear fall of

about twenty-five feet into the bed of a stream below. As his companions were too drunk to render him any assistance, he remained for several hours before he was discovered. I saw him shortly after he was brought home, and found that he had sustained the following injuries:—Over the right parietal eminence there was a large cruciform wound of the scalp, exposing a depressed fracture of the skull, measuring about one inch by three-quarters of an inch; the outer side was most depressed, the external lamina being on a level with the internal lamina of the uninjured bone. Some hair was tightly grasped between the fragments. Over the right hip-joint there was a considerable swelling, and the right ankle was much contused. No other fracture could, however be detected. The man was perfectly unconscious, breathing stertorously, with slow, full pulse; pupils dilated and inactive. As the symptoms appeared to be due to compression of the brain, I determined to attempt elevation. Accordingly, with a moderately sharp-pointed elevator, I scraped away a portion of the diploë from the healthy bone at a part of the fracture where the external table of the fragment was not depressed, as far as the internal table of the healthy bone. I was thus enabled to get the point of the elevator into the diploë of the fragment, and to raise the depressed part in a considerable degree without touching the *dura mater*. I determined to wait now for a few hours and watch the symptoms—prepared, if necessary, to use the trephine. The scalp was brought together by a few points of suture, and antiseptic dressing applied. Soon after the operation the man recovered sensibility, and in the morning was able to give a clear account of the accident. He was ordered a mild saline purge, light unstimulating diet, and perfect quiet enjoined.

November 20th.—Wound in scalp looking well; pulse 100; temperature 99°; not nearly so much pain; sleeps well, and takes his food regularly.

November 27th.—Since last report went on well till this morning, when he had a rigor; complains of severe pain in the contusions at the hip and ankle; the head not painful, and looking well; pulse 120; temperature 100°.

December 1st.—Suppuration in ankle-joint; pulse 140; temperature 101°; night sweats. I made an incision into front of ankle-joint, parallel to the direction of the tendons, under spray of solution of carbolic acid (1 to 50); about two ounces of pus escaped; dressed with protective and carbolised gauze.

December 2nd.—Incision has given great relief to the ankle, but fluctuation is now distinct at the seat of the contusion of the hip. This was also treated by incision, and about three ounces of pus escaped. He does not complain of the head at all; the wound is closing rapidly, and there is scarcely any discharge.

The wounds of the ankle and hip discharged for a long time, and his strength was much undermined. Under tonic treatment, with liberal diet, he slowly improved, and four months after the accident was able to leave his bed. He was now very much emaciated; the wound in the head was contracted to a fistula, through which a sequestrum could be felt with a probe; the fistula was slit up, and a small sequestrum removed.

He now is able to follow his usual work, the only inconvenience being an ankylosed ankle-joint. He never suffers the slightest inconvenience from the injury to the head. There was at no time any paralysis.

Observations.—This case presents several points of interest. In the first place, the relief afforded to the symptoms of compression by the partial elevation of the depressed fragment; and, secondly, the occurrence of pyæmia as exhibited by articular suppuration, while the injury to the head, which was the only lesion which the man sustained attended by breach of surface, retained from the first its healthy action; and at no time was there the slightest symptom to indicate inflammation of the brain or its membranes.

CASE II.—Fracture of the Base of the Skull by Force communicated through the Lower Jaw, with Impaction of the Condyle; Recovery.

Henry L., aged thirty-six (ostler), was cleaning out a stable, September 10th, 1873, when he received a severe kick on the chin from a horse. He was carried home insensible, and on my arrival presented the following appearance:—He was bleeding from the mouth and both ears; he was quite insensible, breathing quietly, with a slow, full pulse. The lower jaw was fractured in two places, viz., between the incisors and between the bicuspid and molar teeth on the right side. The right angle of the jaw appeared to be on a higher level than the left. The pupils reacted slightly to the stimulus of light.

The fracture of the jaw was put up with a poro-plastic splint and four-tailed bandage, and cold was applied to the head. Two hours after the accident the man recovered consciousness. Five

hours after the accident the bleeding was still copious, the pillow being soaked with blood. I accordingly syringed both ears with cold water, which had the effect of diminishing the hæmorrhage. On the following day, September 11th, there was a discharge of clear fluid from the right ear, the bleeding having ceased during the night. The man was quite conscious, and complained of great pain all through the head. From this time he progressed favourably, treatment being directed to regulation of the diet and bowels, and the fracture of the jaw.

October 12th.—As the jaw was firmly united, the splint was removed to-day. A small abscess was opened just under the chin. There is only very slight motion in the jaw, the right angle appearing on a higher level than the left. The patient experiences sudden attacks of giddiness whenever he moves much.

December 4th.—A small sequestrum removed from the jaw by enlarging the fistula. He is now able to walk about, but complains of giddiness whenever he exerts himself much, and he frequently is obliged to catch hold of any object that may be near, in order to prevent falling. The motion of the jaw has slightly increased.

March 1st, 1874.—Henry L. is now able to do some light work. He does not suffer from any brain symptoms. As yet he is unable to close the jaw entirely, and he is only able to depress the chin about half an inch, and cannot protrude it in the slightest degree. He manages, however, to masticate his food. I have seen the patient recently, and he continues in much the same state. He is able to follow his usual employment.

Observations.—In this case I think we are justified in the conclusion that a fracture of the base of the skull took place, into which the right condyle of the jaw was impacted, when we take into consideration the symptoms which existed at the time of the injury and subsequently. In the first place, the hæmorrhage from the ears, which was copious and continuous for fourteen hours, followed by a discharge of clear fluid, would clearly point to a fracture of the base of the skull, implicating the temporal bones. In the second place, the alteration in position and motion of the lower jaw, the right angle being much closer to the zygoma than the left, the inability to open, or completely close, the mouth, and the total loss of power to protrude the chin, prove sufficiently, I think, that impaction took place. And lastly, the symptoms of concussion at the time of the injury, and the subsequent attacks of vertigo, would indicate such lesion of the brain as might be produced by fracture.

That such an accident can take place has been verified by *post-mortem* examination in at least three instances. In the museum of St. George's Hospital there is a specimen taken from a boy, aged twelve years, who received a fracture of the middle fossa of the skull, in consequence of a blow on the chin. He died four hours after the injury, and at the *post-mortem* the condyle of the jaw was found projecting into the cavity of the cranium.* Chassaig-nac records another case of a sailor, who fell upon his chin. The jaws were closely set; the lower jaw was driven backwards, and towards the left. The motions of the jaw gradually became easier, and he left hospital. Five months afterwards he died with brain symptoms, and it was found that the right condyle projected into the middle fossa of the skull. There was a large abscess in the middle lobe of the brain.^b In the museum of Guy's Hospital there is a third example.^c I think we may record the case of Henry L. as one of complete recovery from this injury.

CASE III.—*Unusual Fracture of the Base of the Skull, with Observations.*

William S., aged thirty-four, a labourer, was engaged unloading iron from a truck, June 15, 1874, when the truck received a shock from the engine, and he was precipitated backwards to the ground, his head striking first. When I saw him, shortly afterwards, he was quite unconscious, breathing quietly; he was bleeding from the left nostril, and also from the left ear. Four hours afterwards he had regained consciousness, and the following symptoms were noticed. The porta dura of the seventh nerve on the left side was completely paralysed; there was effusion of blood under the conjunctiva and internal strabismus of the left eye, the sight of the eye being also greatly impaired. Upon examination with the ophthalmoscope, the retina appeared considerably congested, as compared with the other eye, the veins being much dilated, the optic disc being also prominent.

June 16th.—The patient has remained quite conscious. Since last note the bleeding from the nose ceased during the night, and this morning the bleeding from the ear has stopped. When, however, he lies on the injured side, the pillow becomes soaked

* Mr. Hewett. Med. Chir. Trans.

^b Plaies de Tête, p. 158. Jour. Hebdom. Tome III., p. 37. September, 1834.

^c The Practice of Surgery. Bryant. P. 51.

with colourless fluid which comes from the ear. There is no discharge from the nostril.

The case from the commencement progressed favourably. Cold was constantly applied to the head. A mild unstimulating diet was ordered, and the use of purgatives was rendered constantly necessary by the obstinate constipation which existed. The discharge of fluid from the ear ceased after two days. After the lapse of three weeks the symptoms connected with the eye disappeared—namely, the sub-conjunctival hæmorrhage, the strabismus, and the impaired vision. The facial paralysis still continued complete, and he complained of frequent and severe pain in his head. Six months after the injury the man was back at his work, the paralysis of the 7th continuing complete, but otherwise experiencing no inconvenience from the injury.

Observations.—In this case, I think, the indications of fractured base were unmistakable; its direction was clearly mapped out by the train of symptoms, and it appears to have followed an unusual course. The facial paralysis and bleeding from the ear, followed by clear fluid, would point to fracture of the petrous portion of the temporal bone; and the strabismus, sub-conjunctival hæmorrhage, retinal congestion, and hæmorrhage from the nostril, indicate that the line of fracture extended across the sphenoidal fissure to the roof of the nose. There was no symptom to indicate injury to the right side of the head.

That the strabismus and retinal congestion were due to the presence of blood effused at the apex of the orbit pressing on the sixth nerve and ophthalmic vein, was clearly proved by the fact that these symptoms disappeared coincidently with the absorption of the sub-conjunctival hæmorrhage. The continuance of the facial paralysis indicates that the portio dura sustained a more severe injury, probably complete division.

CASE IV.—Implication of the Nutrient Artery of the Tibia in a case of Compound Fracture of the Leg.

Joshua A., aged twenty-one, a collier, was working under ground on September 18th, 1873, when a portion of the rock forming the roof of the mine fell across his right leg. As there was no one near him at the time, he tried unsuccessfully to extricate his leg. His cries were, however, soon heard, and the rock removed. It was then found that he had sustained a compound transverse fracture of the upper portion of the right leg. There was a large

wound, through which protruded the end of the lower fragment. There was a considerable amount of hæmorrhage. The fracture was reduced without difficulty, and the limb was put up in Salter's swing cradle, the wound being dressed with carbolic acid lotion (1 to 40), and covered with Lister's protective and carbolised muslin; all hæmorrhage had apparently ceased. On visiting the patient two hours afterwards, I found that considerable hæmorrhage had taken place, the bed being soaked with blood. The dressings were at once removed, the limb elevated, the wound cleaned from clots, and cold applied; but the hæmorrhage still continued to well up from the deep parts of the wound. I, therefore, reluctantly plugged the wound with lint soaked in strong solution of perchloride of iron, with which some carbolic acid was previously mixed; this had the effect of at once stopping all visible hæmorrhage.

Sept. 20th.—There has been no external hæmorrhage since, but there has been a considerable amount of extravasation into the limb, the ecchymosis extending as far as the middle of the thigh. The plug is firmly attached to the wound.

The plug did not separate till October 2nd, a fortnight after the injury. During this time there was no suppuration, the extremity of the lower fragment was now exposed at the bottom of the wound, which is granulating healthily. The wound was dressed with protective and carbolised gauze every second day.

Two months after the accident the Salter's swing was removed, and the limb put up in a gypsum bandage, with a trap cut in it to admit of the dressing of the wound. Since the previous note there has been scarcely any discharge.

Dec. 20th.—Wound closed to fistula, which was to-day dilated by incision to admit of the removal of the sequestrum, which was felt loose in the wound. Upon extraction it was found to contain the foramen for the nutrient artery of the tibia, as is shown in the woodcut.



The source of the hæmorrhage was now rendered evident.

The patient recovered with a useful leg, without shortening. An ulcer remained at the seat of fracture for several months, but, by careful strapping, this was eventually cured.

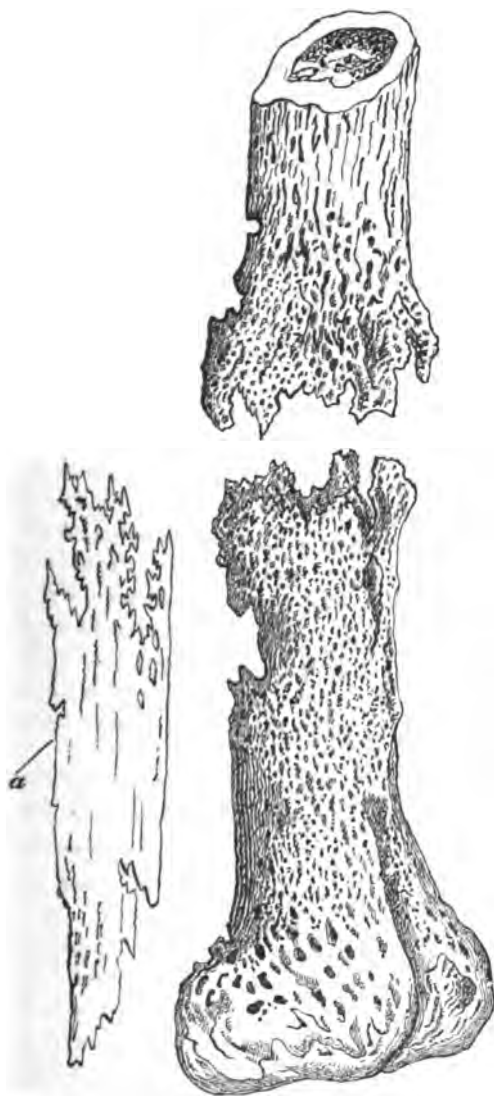
Observations.—This case proves that repair of a fracture may take place by the periosteum alone, without aid from the internal portion of the bone, as it was clear that in this case the nutrition of the interior of the bone had been destroyed by the accident. We may, however, expect that a certain amount of atrophy of the compact tissue of the entire shaft will follow, as has been shown by Mr. Curling* to occur in those portions of bone from which the supply of blood has been cut off by fracture, implicating branches of the nutrient artery.

CASE V.—Spontaneous Fracture of the Femur in Necrosis ; Amputation ; Recovery.

Ellen F., aged fifteen years, came under my care first in January, 1874, in consequence of an abscess in the thigh, which, when opened, gave exit to about two ounces of pus. The wound contracted to a fistula, probing of which revealed the presence of denuded bone. As there were no constitutional symptoms to speak of, the case was left to nature. The patient was able to walk well, to take her food, and experienced no further inconvenience from the disease than an intermittent slight discharge of matter from the fistula. She continued at her usual employment for five months. When walking quietly in the garden, on July 23rd, the limb suddenly gave way, and she fell to the ground. As I was away from home at the time, she was attended by my assistants, Dr. Turner and Mr. Shekleton, who informed me that there was considerable hæmorrhage from the fistula, and that the limb was much deformed.

Owing to the slight constitutional symptoms which had been present, they made an attempt to save the limb, which was put up in a bracketed Liston's splint. This treatment was continued for a month. The girl, however, began to suffer severely from hectic, having a pulse of 100 in the minute, loss of appetite, and profuse night sweats. No attempt at union had been made, and the probe revealed the presence of a loose sequestrum. It was evident, therefore, that the case was one for amputation. On August the 23rd I amputated in the upper third of the thigh, adopting Teale's

* *Med. Chir. Trans.* Vol. XX.



method, as there were abundant soft parts to spare. As the girl was very anæmic, I used Esmarch's apparatus, and there was scarcely a trace of hæmorrhage. The amputation was conducted on antiseptic principles. A drainage tube, soaked in carbolic oil, was placed across the stump, and the flaps brought together by carbolic catgut. Part of the wound healed by the first intention, but the angles remained open for a considerable time. Convalescence was retarded by the formation of an abscess, which opened at the inner angle. The stump was firmly consolidated, and the girl perfectly recovered by November 20th.

Upon examining the limb, it was found that the femur was fractured in the middle third. The appearance of the macerated bone is well shown in the woodcut, which was drawn for me by a distinguished amateur. The entire lower fragment exhibits signs of osteitis, being in some places so soft as to be easily indented by the finger. Surrounding the seat of fracture there are numerous stalactitic growths of bone. The sequestrum (*a*) was lying loose immediately over the seat of fracture.

The chief points of interest in this case appear to be—the unusual occurrence of spontaneous fracture in cases other than those of malignant disease of bone, and the very slight constitutional disturbance connected with such extensive disease, by which I was induced to allow the patient to go about. I also more readily consented to her walking about, as I have a patient, a collier, with a fistula connected with a necrosed thigh-bone, which he tells me has not prevented him from working for twenty-five years.

CASE VI.—*Case of Spina Bifida treated with the Aspirator and Elastic Ligature; Death on the Fourteenth Day.*

Early in January, 1874, a child, aged three months, was brought to me with a tumour depending on spina bifida; it was situated in the dorso-lumbar region, about the size of a small orange, with a broad pedicle. The child appeared otherwise healthy, and was well nourished. As the skin covering the tumour was healthy, I recommended palliative treatment only; the tumour was covered with cotton wadding, and a flannel bandage applied round the body. The disease, however, rapidly increased, and by the middle of March had attained the size of a small coconut. There was an ulcer about the size of a florin on the surface, and it appeared to be on the point of bursting. Viewed by transmitted light there was no evidence of the presence of the spinal

cord or any large nerve in the sac. I explained the great danger of the case to both parents, and they were both anxious that the operation should be performed.

On the 20th of March I proceeded to operate as follows:—I surrounded the pedicle, which was three and a-half inches in circumference, with a piece of elastic ligature, soaked in carbolic oil, and, before tightening it, I introduced the finest needle of the aspirator into the tumour, and then, as the fluid was withdrawn, gradually tightened the elastic ligature until the opening into the spinal canal was closed. I then tied the elastic ligature and emptied the sac of 20 ozs. of clear fluid, containing scarcely a trace of albumen. A considerable quantity of chloride of sodium and a trace of sugar were withdrawn. There was no paralysis following the operation. On the fourth day the ligature had cut through the skin, and the case appeared to be progressing most favourably, when the child suddenly died convulsed on the fourteenth day. I was not allowed to make a *post-mortem* examination. I, however, examined the ligature, which had almost completed the division of the pedicle, without, as far as I could discover, opening the spinal canal.

The object which I had in view in this operation was to draw off the fluid while the opening was being closed, so as to prevent alteration in the tension of the fluid in the spinal canal. I also hoped that the process of ulceration through the pedicle, by the pressure of the elastic ligature, would cause the closure of the opening by adhesive inflammation before the pedicle was entirely cut through.

Although there was a fatal termination to this case, I think the method is deserving of a trial in favourable cases for operation, the large size of the tumour in this instance rendering it unfavourable for any form of treatment.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

WORKS ON HYGIENE.

1. *A Manual of Hygiene, Public and Private, and Compendium of Sanitary Laws, for the information and guidance of Public Health Authorities, Officers of Health, and Sanitarians generally.* By CHARLES A. CAMERON, Ph.D., M.D., F.R.C.S.I., L.K. & Q.C.P.I.; Professor of Hygiene, Royal College of Surgeons, Ireland; Medical Officer of Health for Dublin; Public Analyst for the Cities of Dublin, Limerick, &c. Dublin: Hodges, Foster, & Co. London: Baillière, Tindall, & Cox. 1874. 8vo, pp. 475.
2. *Manual of Public Health for Ireland.* By THOMAS W. GRIMSHAW, M.A., M.D., Dub., &c.; J. EMERSON REYNOLDS, F.C.S., &c.; ROBERT O'B. FURLONG, M.A., Dub., Barrister-at-Law; and JOHN WILLIAM MOORE, M.D., M.Ch., Dub., &c. Dublin: Fannin & Co. London: Longmans, Green, & Co. 1875. Post 8vo, pp. 344.

THE Public Health Act of last session has imposed on Corporations, Poor Law Guardians, and the Medical Officers of Dispensaries, new and important duties, to which, in most cases, their attention had not been specially directed in previous years. In the discharge of these duties most of them will meet with two difficulties—in the first place, they will need scientific information; and in the second, they will need direction in interpreting a rather complicated Act of Parliament, the provisions of which are at certain points crossed by previous legislative enactments. To afford them aid, both technical and administrative, and to guard them against the numerous mistakes into which they might naturally fall, the works before us have been published.

For more than ten years Professor Cameron has occupied a foremost place in this country in connexion with sanitary duties. His eminent position as a chemist early led to his employment in

the detection of impurities in water and adulterations in food, and secured for him the appointment of Analyst to the City of Dublin and to several of the larger towns in Ireland. In 1867 the Council of the College of Surgeons elected him to the Professorship of Hygiene in the College, as a tribute to his acknowledged attainments; and those who have listened to his lectures have been struck with his singular power of conveying information and engaging the attention of his audience. His "Reports on Public Health," which have regularly appeared in this Journal for some years past, have made our readers familiar with most of the subjects with which sanitary science deals, and the frequency with which reprints of these Reports have appeared in exchange journals shows how they have been appreciated. Under these circumstances it was natural that he should furnish a manual for the guidance of those on whom had devolved the duties with which he was so thoroughly familiar. His book supplies the two kinds of information required by those who are called on to act under the Sanitary Bill of last session—it explains the relation between the water supply and disease, and the modes of testing, purifying, and softening waters; the injurious effects of impure air, the pollution of the atmosphere by manufactures, and the importance and proper mode of carrying out efficient ventilation; the influence of elevation and moisture upon health; the modes in which contagious diseases spread, and the means which may be adopted for their prevention, including the important question of vaccination and re-vaccination; the construction of hospitals and the hygienic arrangements necessary in schools; the danger and mode of disposing of sewage; the influence of unhealthy occupations; the detection of diseased and unsound meat, and adulterations in food and drink; and the influence on the individual of exercise, bathing, and clothing. A large portion of the volume, however, is occupied with what may be regarded as the administrative, in opposition to the scientific, portion of the duties of sanitary authorities. The sanitary statutes applicable to Ireland are reprinted in full with explanatory notes, and copies of the Circulars of the Local Government Board, and of the Regulations of the Dublin Corporation regarding water supply and other matters, are given. It will thus be seen that Professor Cameron's book really constitutes a standard work of reference for the use of all those who may be called on to take part in carrying out the law in matters which concern public health, and as such, will, we have no doubt, lie on the Board-room table of every Union and

Dispensary Committee in Ireland. It fully maintains its author's acknowledged position as an authority on all questions of public health.

The second volume before us, the "Manual of Public Health for Ireland," is the work of four authors, and we regret that it does not appear which are the chapters for which each is responsible. The first sixty-eight pages are, we presume, the work of Mr. Furlong. They contain an abstract of the provisions of the Public Health Act, and an Index to the Sanitary Acts. In compiling these, the greatest care has evidently been exercised. The Index to the Sanitary Acts is worth the price of the entire volume, and will enable magistrates and solicitors to find, without trouble, the clauses, not only of the Act of last session, but of previous statutes which apply in any question which may come before them. The next sixty-five pages are devoted to Vital Statistics, without a knowledge of which the direction in which sanitary effort is needed cannot be known, or the result of sanitary legislation be estimated. The writer of this portion of the volume first points out the precautions necessary to the compilation of statistics. In the three following chapters he then shows the effect, on the birth-rate and death-rate of a country, of various social, political, and climatic influences, and gives a digest of the last census of Great Britain and Ireland, and to this succeeds a short chapter on the Physical Development of Man. In these chapters, which may be looked upon as constituting the second portion of the volume, a vast amount of curious, and, for scientific purposes, most valuable, information is presented in the smallest possible space, and in the clearest possible language. The succeeding fifty-five pages are devoted to the consideration of Preventable and Controllable Diseases. The conditions under which zymotic diseases spread are explained, the individual diseases included under this term are severally noticed, and the circumstances to which their origin and propagation have been attributed are examined. The effects of enteric fever, measles, and scarlatina, and of impure air and dampness of soil, in favouring the development of constitutional disease, and the influence of unhealthy occupations and vicious habits in undermining health, are then noticed. These chapters may be considered as the third portion of the volume, and contain really all that is known with any certainty on the matters with which they deal. The next chapter (the seventeenth) gives directions, which may be easily

followed by any intelligent person, for ascertaining the wholesomeness of meat, and the purity of the ordinary articles of daily consumption. The eighteenth and nineteenth chapters give an account of the various circumstances which influence the quality of waters, and the mode of detecting and removing impurities. The author of this portion of the Manual has made his processes as simple as possible, but we have no doubt they will be found amply sufficient for every purpose of sanitary officers. The twentieth, twenty-first, twenty-second, twenty-third, and twenty-fourth chapters deal briefly, but in a thoroughly practical manner, with House Construction, Ventilation, Sewage, Disinfection, and the Accommodation for the Sick; and the work concludes with three concise chapters on Meteorology, in which are explained the circumstances on which climate depends, the instruments necessary for estimating temperature, humidity, rainfall, and atmospheric pressure, and the influence of season on the prevalence of zymotic diseases.

The "Manual of Public Health for Ireland" does infinite credit to its authors, and bears on every page evidence that the various parts have been written by men who were thoroughly conversant with the subjects on which they wrote, and spared no pains to convey the necessary information, in the plainest and briefest language. The editor (Dr. J. W. Moore) may well be excused for the delay in the publication of the work, to which he refers in the Preface, in consideration of the admirable accuracy which characterises his labours.

Army Medical Department Reports for the Year 1872. Volume XIV. London: Printed for Her Majesty's Stationery Office, by Harrison and Sons. 1874. 8vo, pp. 557.

THESE reports contain, as usual, a mine of information for the military and also for the civil medical reader. The first 220 pages are taken up with reports on the health of the troops serving in the United Kingdom and abroad. At page 13 we find a valuable Table which shows the admissions to hospital, the deaths, and the number invalided in each arm of the service in 1872, with the respective ratios per 1,000 of the strength, and the corresponding ratios for the ten years from 1862 to 1871 (inclusive). From this Table it appears that soldiering—at all events, soldiering in the United Kingdom—is by no means an unhealthy occupation, or one

very prejudicial to life. The average annual death-rate per 1,000 for ten years was, in the Household Cavalry, 8·15; in the Dragoon Guards and Dragoons, 7·07; in the Royal Artillery, 8·33; in the Royal Engineers, 6·56; in the Foot Guards, 7·84; in the Infantry Regiments, 7·78; and in the Depôts (curiously enough), 10·92.

The great attention now paid to sanitation by the authorities of the Army Medical Department will strike the most casual reader of the reports. Nearly 200 pages in the Appendix are devoted to articles on hygiene. Foremost among these comes an exceedingly valuable "Report on Hygiene for 1873," from the pen of Dr. E. Parkes, F.R.S. This will adequately repay perusal by all those who are in any way interested in the subject of hygiene—and who is not so? Dr. Parkes discusses the important topics of food, air, soil, sewerage, and spread of the following specific diseases—typhus, enteric fever, yellow fever, cholera, and malignant pustule. Under the head of "Food" he deals with the adulteration of milk, and on the vexed question of the amount of solids in a pure sample he makes these useful and judicious observations:—

"Under these circumstances it seems to me that, in a court of law, the standard of 9·3 per cent. of 'solids not fat' would break down, and it appears safer to assume the possible minimum amount of total solids to be equal to 10 or perhaps 11 grammes in 100 c. c. of milk. No analysis of undoubted pure cow's milk has, to my knowledge, ever detected a less amount of solids than 10 grammes, and I think 11 is extremely rare. We should be then absolutely safe in calculating the addition of water from the standard of 10 grammes in 100 c. c.—viz., that every deficiency of a gramme below 10 grammes in 100 c. c. implied the addition of 10 per cent. of water, and that conclusion could be maintained in the face of any cross-examination; we should also be practically safe in calculating it from 11 grammes. It may be said, however, that this rule would underrate, in many cases, the amount of water which had really been added. But this difficulty could be met by explaining to the magistrate that though the conditions of the problem cannot be made exact enough to enable a witness to swear that a larger quantity of water must have been added, yet that in the large majority of cases the solids of milk are not 10 or 11 but 12 per cent., and therefore there is always a great probability that the evidence is below the truth. And then if the magistrate thought it desirable—and he would, no doubt, often so think—the inspector could be ordered to obtain the milk direct from the dairy, and could take proper precautions against any water having been added. The analyst would then be able to determine the actual standard of solids for that dairy."

The most approved and modern methods of analysis of butter, tea, and bread (for alum), are described. Under the heading "Air," an epitome is given of Mr. Blackley's researches on hay-fever and its causes, and of Dr. Cunningham's microscopic examinations of air in India. Under "Soil," Professor Virchow's "Report on the Sewerage of Berlin," is considered, in which the relation of changes in the ground-water to the general mortality and to that from enteric fever in the German capital is discussed. In a word, Dr. Parkes supplies us with a "Manual of Public Health for 1873" in his report.

Articles on the "Chemical Examination of Water at Cape Coast Castle," by Surgeon Fleming; on an "Analysis of Surface Soil from Cape Coast Castle," by Candidate Warden, of the Indian Service; on "Malarious Fevers, Cholera, &c.," by Deputy Surgeon-General Munro; on the "Nature and Varieties of Destructive Lung Disease included under the term Pulmonary Consumption, as seen among Soldiers, and the Hygienic Conditions under which they occur," by Surgeon Welch; and another essay on the same subject, by Surgeon Alcock, are also included in the Appendix. It likewise contains several clinical records of great interest.

It is a pity that a volume which has such claims to be regarded as a work of high merit should have its value impaired by the occurrence of far more than the average number of printers' errors throughout it. True it is that in many instances the errors are immaterial, not affecting the sense of the passage, or being otherwise than orthographically wrong. But in some cases they are important, and should have caught the editorial eye. To take one example: in the Meteorological Tables at the end of the volume, we read that the rainfall at Newcastle, Jamaica, was in 1872 on the ground 66.32 inches, and at 40 feet above the ground 126.95 inches. Now every meteorologist knows that the reverse was more likely to be the case, for it is a rule which, we believe, knows no exception, that the rainfall is greater at low levels and on the ground than at high levels. Why this is so is another question, into the discussion of which we shall not at present enter with the Jamaica observer.

Croup, in its Relations to Tracheotomy. By J. SOLIS COHEN, M.D.
Philadelphia: Lindsay and Blakiston. Pp. 78.

THE writer of this essay is already known to the profession as an observant physician, who evidently devotes to whatever work he undertakes an amount of painstaking that is worthy of being imitated. As a lecturer on diseases of the throat in Jefferson Medical College, he has gained an experience which he has already placed at the service of his brethren. The essay before us deals with a special form of affection, which has always proved of the greatest interest to the practitioner, and which still occasionally forms the subject of warm dispute. There are two great classes in the profession who are divided upon the issue whether any operative interference in cases of croup is justifiable, and it is specially in reference to this point that the essay has been written. As amongst ourselves, "tracheotomy for croup is generally regarded with much disfavour" in Philadelphia. The reason is that there has been a great want of success, and as is too often the case, we find that men rush into the extreme of stubborn resistance, and "refuse to sanction tracheotomy in croup under any circumstances." As Dr. Cohen wisely says:—"This radical feeling is wrong. Not only should our individual experience be utilized in judgment, but the recorded experience of others also. Early failures may be followed by ultimate success."

The essay has in its opening particular reference to results of the operation. The author has collected over five thousand cases in which tracheotomy was performed, and a perusal of them is most interesting. Guersant lost his first 23 cases; Bartley, the first 12, while in his hospital (Sainte-Eugénie), from 1861 to 1867, 785 cases were operated upon, with 222 recoveries. In Scotland, Buchanan has had 13 recoveries out of 39, and Cruikshank 8 out of 11, this being a very high percentage of success having regard to the number of cases.

It is a remarkable circumstance that the operation should be almost always unsuccessful in adults; indeed, in not one of the cases mentioned in the book was there a recovery. On the other hand, "very few children under two years old are saved; few over eight or nine." According to Bourdillat's figures, in 1,300 cases there was a progressive rate of recovery as the age advanced, thus: $2\frac{1}{2}$ to 3 years, 17 per cent.; $3\frac{1}{2}$ to 4, 30; $4\frac{1}{2}$ to 5, 35; $5\frac{1}{2}$ to 6, 38;

and above 6, 41 per cent., verifying a law laid down by Millard, that "all things being equal, the chances of recovery are in direct ratio with the age of the patient." Regarding the operation at an early age, 22 cases are given in which success attended it; the patients' ages varying from 6 weeks to 23 months.

Dr. Cohen having treated thus of results, proceeds to speak of the indications for the operation, the points of importance in connexion with the operation itself, the after-treatment, and casualties. Under the first head he points out that even exudative products in the bronchi, at least in the larger divisions, are not an insuperable contra-indication, casts of the tubes having been expectorated in cases which have recovered. Guersant considered the operation indicated whenever voice is extinct. Professor Heuter lays down the rule—"I consider the hour for tracheotomy has come as soon as the substernal tissues sink in a marked manner on inspiration, and the blue colour occurs in the lips."

Into the steps of the operation, and the subsequent treatment, Dr. Cohen goes with great minuteness, quoting from the most eminent authorities. Heuter recommends the division of the cricoid; Trouseau, of the trachea, while others adopt various modifications, such as valvular openings, and cutting a piece out altogether. But for the details we must refer the reader to the book itself, simply giving here the conclusions at which the author arrives:—

"1. That there are no insuperable contra-indications to tracheotomy in croup. 2. That the administration of an anæsthetic for the purpose of controlling the child's movements is admissible in performing the operation, but that it should be used with great caution. 3. That a careful dissection should be made down to the windpipe, and hæmorrhage be arrested before incising it, whenever there is at all time to do so. 4. That the incision should be made into the trachea as near the cricoid cartilage as possible, to avoid excessive hæmorrhage, and subsequent accidents which might occasion emphysema. 5. That a dilator should be used or a piece of the trachea be excised, whenever any difficulty is experienced in excising the tube. 6. That the tube should be dispensed with as soon as possible, or altogether if the case will admit of it. 7. That assiduous attention should be bestowed upon the after-treatment, especially that of the wound; and that a skilled attendant should be within a moment's call for the first 24 or 28 hours immediately following the operation."

We very heartily commend this book to the profession. It is

true that Dr. Cohen has not himself had much experience of the operation, seeing that he has operated only once, and that unsuccessfully. But he has gathered together an amount of information that is not to be got elsewhere. He seems to have consulted and given full references to all the literature upon the subject that is really worth looking into. He has done good work towards breaking down a very formidable opposition; and upon this, and the commendable industry he has exhibited, we sincerely congratulate him.

The Medical Directory for 1875. London: J. & A. Churchill. Pp. 1,186.

WE have received "The Medical Directory for 1875," and we have only to say that it bears evidence of the unremitting zeal and attention by which Messrs. Churchill seek to make each re-issue of their invaluable publication more complete than the last.

The Directory contains this year thirty-two pages more than in 1874, of which seven have been devoted to the completion of the list of the provincial medical officers of health.

The Calendar has not been inserted this year; but, as we always looked upon this as a comparatively useless element, and not worth the trouble of compilation, we do not regret its omission. There is, however, an omission which we do regret. It will be remembered that the names of those gentlemen who had not registered under "The Medical Act" were characterised in previous issues by an affix. This has been omitted, and we cannot help thinking that the value of the Directory has been thereby considerably impaired.

Tumour of Lower Jaw Removed without External Wound. By C. F. MAUNDER. London: J. & A. Churchill. Pp. 27.

THIS little book consists of the history of two cases in which Mr. Maunder has successfully removed lateral portions of the lower jaw without external wound. In one instance the sections were through the jaw on the right side of the symphysis and through the middle of the left ramus; in the other the piece removed was scarcely so large, but included a part of the ramus. An incision was made down to the bone, a raspatory introduced, and the periosteum and soft parts were easily stripped off on both sides, the

jaw being divided by a saw and forceps. The author speaks of the facility with which the soft tissues of the chin could be turned literally inside out. In both cases there was recovery with little deformity, although the expected deposit of bone did not take place to any extent.

The great advantage claimed for this method of operating is the fact that no external scars are made. This in the case of females is undoubtedly of very great importance, and we believe that the success which at all events in this respect has attended Mr. Maun-der's efforts will induce many surgeons to adopt, in suitable cases, the procedure to which he calls attention.

The Essentials of Materia Medica and Therapeutics. By ALFRED BARING GARROD, M.D., F.R.S., &c. Fourth Edition. Revised and edited, under the supervision of the Author, by E. BUCHANAN BAXTER, M.D., Lond. London: Longmans, Green, and Co. 1874. 8vo, pp. 549.

THE fourth edition of a well-known book calls for little comment from the reviewer. His duty is chiefly to see that the author has kept pace with the progress of medical thought and knowledge. In the present instance, we have no hesitation in saying that Dr. Garrod has justified the demand for another edition of his work. He has incorporated with it the recent additions to the *British Pharmacopœia*, and several modern but non-official drugs are fully described and commented on. Thus we find mention made of *Apocodeia*, *Apomorphia*, *Condurango*, *Croton-chloral Hydrate*, *Eucalyptus*, *Guarana*, *Tetrachloride of Carbon*, *Bichloride of Methylene*, *Sulphocarbolate of Soda*, *Trimethylamine*, and many other therapeutical novelties.

The portion of the volume which is devoted to "Therapeutics" is probably as well compiled as the difficult and intricate nature of this important subject admits of. The section on purgatives is especially interesting. The chemistry has been, for the most part, carefully revised, and the new nomenclature is exclusively adopted, except in the headings of the articles, where the custom of the *British Pharmacopœia*—that of giving both old and new formulæ—has been followed. A very full "Table of Contents" at the beginning, and an equally copious "Index" at the close of the work, add materially to its usefulness.

In concluding this brief notice we must congratulate Dr. Garrod and his able editor, Dr. E. B. Baxter, on the successful way in which this book has been brought out. At the same time we cannot but regret that it has been deemed advisable to reprint so much of the *British Pharmacopœia*. This, however, is a fault which is common to the great majority of writers on *Materia Medica* and *Therapeutics*. Why it should be so is not easily understood, for surely the *Pharmacopœia* ought to be in the hands of every practitioner and medical student. If so, what need for reprinting at length so much of the official volume? By all means let us have a full and correct explanation of the processes and tests mentioned in the *Pharmacopœia*, but this is not incompatible with the omission of most of the text of that work.

Notes of Demonstrations on Physiological Chemistry. By S. W. MOORE, Fell. Chem. Soc., &c. London: Smith, Elder, & Co. 1874. 8vo, pp. 58.

It is hard to know what to say of this little book, which, in seeking to include an immense range of subject-matter in the smallest possible space, sacrifices much of its intrinsic value. Without the slightest preparation we are hurried from one topic to another of a completely different nature; and just as we are getting sufficiently interested in, for instance, "Fats," they are snatched, Tantalus-like, from our grasp, or (if you will) from our lips, and the "Spectroscope" is presented to our gaze. "The spectroscope is one of the happiest discoveries of modern science"—this is the somewhat trite remark with which the section on this instrument opens, and which might well have been omitted in a book where so little space was at the author's disposal.

The absence at any attempt to systematise the subject-matter in three-fourths of the book is most objectionable. No doubt, after the digression to the spectroscope, Mr. Moore gives us, in orderly succession, an account of digestion and its processes, and of the blood. But then he goes hopelessly off the rails again, and under the head of "Secretions" we find "Milk" only; or, if we read on under the same heading, we must include in the secretions urine, sweat, tears, semen, the menstrual fluid, cerumen, mucus, *bone, teeth, muscle, and pigment!*

While thus condemning the loose arrangement which mars this

book, we should be doing Mr. Moore an injustice did we not call attention to some of its good points also. The section on "Albumen" (we will not spell it "Albumin") is decidedly useful; and the medical student will obtain information about the nature of fats, the examination of the blood and urine, &c., in a condensed form, which will aid his memory. Klein's method of obtaining hæmin crystals is concisely given at page 39, and Russell's and West's modification of Davy's (not *Davey's*) process for the quantitative estimation of urea will be found at page 51.

We trust Mr. Moore will not take amiss the strictures we have felt constrained to make in noticing his little book. Despite all its faults, it leads us to hope great things of its author, when experience has enabled him to reduce his knowledge to a system, and has taught him to separate the dross from the pure metal.

A Handbook of Therapeutics. By SYDNEY RINGER, M.D. Fourth Edition. London: H. K. Lewis. 1874.

THE second edition of this work covered 483 pages; the fourth edition reaches to 632 pages, notwithstanding the omission of the Posological Table, which occupied fourteen pages of the second edition. In this edition, besides the augmentation of many sections, new chapters have been added on Phosphorus, Croton-Chloral, and Hamamelis, and the author has endeavoured to incorporate the important discoveries and additions to therapeutics which have been made since the publication of the previous edition.

The demand for four editions within five years is sufficient evidence that Dr. Ringer has succeeded in preparing a manual which meets the wants of a considerable proportion of the profession, and many useful hints can undoubtedly be gathered from its pages.

It is singular that the author has not consulted the convenience of his readers by amplifying and rendering more accurate the very scanty and insufficient index of medicines, and it is a pity that so many errors in orthography have been allowed to pass uncorrected—*e.g.*, Schneidarian, mezerion, methylene, circinnatus, ichthyosis, megraine, prostatitis, synchosis (for sycosis!).

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

Wednesday, January 15th, 1875.

HENRY KENNEDY, M.B., Vice-President, in the Chair.

Simple Chronic Ulcer of the Stomach. By S. M. MACSWINEY, M.D.;
Physician to Jervis-street Hospital.

THERE is, as is well known to members of this Society, a painful and dangerous, and not seldom fatal, disease, of not rare occurrence, met with chiefly in young females between about sixteen and twenty-six years of age, the features of which physicians have to be well acquainted with, in order that they may distinguish it when they meet it, and treat it successfully. I allude to the "simple chronic ulcer" of the stomach, first distinctly recognised and described as a special disease by Cruveilhier in 1830.* I am not in possession of any new knowledge respecting this disease. My only excuse for detailing the following cases, illustrating the affection, which were lately under my care either at the hospital, or in dispensary practice, is that a renewed discussion upon the malady may be advantageously, and with propriety, proposed to the Medical Society of the College of Physicians.

CASE I.—M. C., aged twenty-three, French polisher, admitted to hospital October 26, 1874.

History.—Four years ago she began to feel distress of stomach after taking food. Her appetite failed, and she suffered from flatulence. These dyspeptic symptoms were succeeded by epigastric pain, nausea, and thirst. The pain was strictly located at the ensiform cartilage. When in bed it was relieved when she lay with the abdomen and face under. This pain is described as being of a *burning* character, and it was always

* Anatomie Pathologique du Corps Humain.

made much worse by the use of food, more particularly of solid food. On this account she would often, although hungry, abstain from food, in order to "keep the pain away." Her bowels were usually much constipated. When the state now described had lasted for about eight weeks she was quite unexpectedly seized, whilst at her evening tea, without any warning, with a violent attack of vomiting, in which she lost a large quantity—she says much more than a quart—of blood. She was medically treated for this attack, and after remaining anæmic and delicate for several months, she regained, in a great degree, her former good health. She then remained well for two years, during which time she habitually ate the ordinary food of persons in her class, when the same symptoms of disturbed digestion from which, as mentioned, she had previously suffered, again presented themselves, and culminated, as before, in a large hæmatemesis. This was followed by profound exhaustion, and she sought admission to hospital. When received as an intern patient she was extremely weak; her face was very pallid, and she had a state of disturbed breathing, which the least excitement rendered agitated and gasping. She was exquisitely sensitive to the lightest pressure in the epigastric region, the maximum intensity of pain on pressure being situated immediately below the ensiform cartilage; the tongue was dry; her bowels confined; her sleep partial and disturbed. She was thirsty, and so devoid of appetite that she loathed the very idea of food. She had a haggard, despondent look, and expressed herself as feeling wretchedly depressed and nervous. Whatever she swallowed, either solid or liquid, caused her pain immediately, and was rejected by vomiting shortly after being taken. Vomiting in this way always relieved her; the vomited matter was said to have a sour and burning taste. Alcohol in any form always made her worse; a perfectly bland fluid, such as water, occasioned her least pain, but even it was vomited. She was treated, and in four weeks left the hospital, apparently quite well, having regained colour, strength, appetite, and cheerfulness, and being absolutely without pain in the stomach in all conditions of that organ as to food.

CASE II.—M. FitzH., a housekeeper, unmarried, aged thirty years, delicate-looking, was admitted November 1, 1874.

History.—For the last six or seven years she has suffered greatly from pain in the left epigastric region, and constant derangements of digestion. Her menstruation has always been regular; her bowels much disposed to be constipated.

Present state.—She is very thin and emaciated. She complains that she is scarcely ever without pain in her stomach. This pain is *ensiform* in situation; it is also felt in a fixed vertebral point in the middle of her back; it is increased in severity by the taking of food and by pressure.

She greatly wishes to vomit, but seldom does so, and then only when she irritates her fauces, for the purpose of causing *emesis*. Decubitus is upon her back almost always; in this position of resting most relief from pain is obtained. She has never brought up blood, and has had intervals, during these years that she has been an invalid, of comparative freedom from suffering. Eating is always followed by pain. She has to keep constant watch upon herself respecting the food she uses, as, unless it were soft and easy of digestion, it would cause her intolerable pain.

CASE III.—Lizzie L., aged nineteen, a milliner, admitted November, 1874. This girl enjoyed good health until three months ago. She was then attacked with violent epigastric and rachidian pain; at the same time she vomited everything she swallowed, either food or medicine. Reception of food into the stomach increased the pain; rejection of it by vomiting was followed by immediate alleviation of her sufferings. She states that the vomited matters are always "sour." She invariably refers the pain to the "pit" of the stomach, where it is fixed. Pressure, even the slightest, in this region cannot be endured. Her bowels are always constipated. Her menstruation is scanty, but regular. She suffers from indigestion constantly. When in bed she lies, for the most part, on her left side, to secure some relief from pain.

CASE IV.—M. A. C., aged eighteen, a "French polisher," applied at the out-patient department of the hospital on November 30, 1874. She looked pale and anxious. She complained that she had suffered for the last five weeks from a pain, which was very severe, situated at the centre of her stomach, just below the lower end of sternum. She had likewise, she said, a similar pain in the "very middle of her back." For the last three weeks she has been very sick every day, particularly after her meals. The use of food has caused her great distress and pain in the points before-mentioned, and she has had no ease until she rejected it by vomiting. She usually vomited very soon after each meal. She knows of no cause to which to refer her present attack. She has habitually used the food customary with persons in her rank of life—viz., bread and butter, with tea, twice a day, with occasionally fresh meat, or commonly bacon and vegetables, for dinner. She is free from the pain at night, is "regular" as regards the catamenia, but suffers greatly from constipation.

Four days before applying for medical aid this poor girl had been seized, without any warning, with a fit, which—from the description of it which I received from those who witnessed it—was undoubtedly epileptoid in its character. I regarded her case as one of "gastric ulcer," and prescribed in accordance with this view. After the lapse of a few days I again saw her, and again prescribed for her. On this occasion she expressed herself relieved. I have not seen her since.

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seen on the top of the vomited matter, I will only say that I looked upon it with much suspicion, and doubted if it came from the stomach at all. It was small in quantity—about half a teaspoonful—and was never intermixed with the vomited matter, but always floated on the top of it.

Neither was I satisfied as to the correctness of her account of the pain which she professed to suffer. She referred it to the usual seat of this symptom in “gastric ulcer;” but I found out, without much difficulty, that in her description she constantly exaggerated her sufferings. By engaging her in conversation, she would permit strong pressure to be made in a situation the slightest touch in which a moment before would have caused her to scream. And, on the other hand, she confessed to having pain in various parts of the body when induced to think that suffering in these localities constituted a necessary part of her disease.

I have called the rejection of food by this patient “vomiting,” being the word used by herself; but, in my opinion, the mode in which it was brought up was strictly more analogous to “ruminating” than to vomiting. I believe the process to have been indeed identical in character with that “regurgitation” so graphically described by Sir H. Marsh* in his letter to Dr. Little. Suspecting that this “regurgitation” might be of “reflex” origin, I examined her with the “speculum uteri,” and by this means I ascertained that she laboured under uterine leucorrhœa to a very considerable extent. To the cure of the local lesions, and to the strengthening effect of nervine and tonic remedies, combined with a judicious “hygiène,” I look for her ultimate restoration to health.

I have ascribed the symptoms in four of these cases to the presence of one or more ulcers in the stomach. The diagnosis of gastric ulcer, however, is often so difficult and uncertain, that it may be fairly objected that this opinion is not correct. Fortunately for the patients, it has not been possible to put to the crucial test of a *post-mortem* examination the correctness of this diagnosis. I founded it, however, upon the presence in these patients of all—or rather of the most important—of the admitted signs of the disease. Thus there was:—

1. *Pain*.—This was constant, both in its presence and in its situation; burning, increased by pressure, intensified by food taken; moderated when the stomach was at rest; in some of the cases relieved by posture; in others not; in all made worse by alcoholic stimulants.

2. *Vomiting*.—This symptom, also, was present in all the cases; in two it was excessive; in a third moderate; in the fourth very slight; in all it brought the greatest relief to the symptoms. The composition and reaction of the vomited matters varied; it consisted either of the food taken principally, or of a thick mucous fluid, or of a sour, burning “waterbrash;” and it was “acid” in one or two, “acrid” in another,

* Dub. Med. Jour. Vol. XI., p. 481.

bitter and yellow in a fourth case; so that in all the patients the secretions of the stomach were altered, and in all a peculiar and disagreeable taste in the mouth was complained of.

3. *Derangement of Digestion*.—This existed in all, so that the appetite was either lost, or variable, or capricious. There was great distress at the epigastrium, and flatulence in some. Thirst was complained of by most of the patients, and great constipation was suffered from by all.

4. *Hæmorrhage*.—This occurred but in one patient, in whom it happened twice, in an amount, upon each occasion, to seriously peril life. Although there may be idiopathic hæmorrhage from the gastric mucous membrane, and also hæmorrhage in cancer of the stomach and from other causes, still such an occurrence, when the other chief symptoms of the disease are present, may be safely referred to “gastric ulcer.”

5. *Age*.—The liability to the disease may be said, with confidence, to preponderate between about the ages of fifteen and thirty. Now the age, respectively, of my four patients was included between these limits of years.

6. *Sex*.—The disease, it has been ascertained, is nearly three times as frequent in females as in males. Moreover, these females would appear to belong, for the most part, to a certain order or class in life. All my patients were of the female sex, and members of the too-favoured class.

7. *Menstruation*.—In all my patients this function was moderately well performed. There was, certainly, no serious or profound disturbance or irregularity in the catamenial discharge present in any one of these females; so that, as far as these cases testify, the opinion that there is a direct relation between amenorrhœa and “simple ulcer” is not sustained, but the opposite. And I am tempted to say that herein may be found, perhaps, an aid to diagnosis between vomiting and pain in hysteria, and those symptoms in gastric ulcer. Thus, in the former, the monthly health is always gravely deranged; in the latter it is, for the most part, according to my experience, regular.

It will have been observed that two of the patients were “French polishers.” I know not if this occupation be exceptionally injurious to health, although I suspect it is so; but it certainly has occurred to me to have met, both in hospital and in dispensary practice, with a considerable number of female patients who worked at this business, and were suffering from serious derangements of the digestive system.

Under treatment, the symptoms in these patients soon disappeared, but the future course of the disease cannot be predicted. In M. C.’s case, I fear, imperfect cicatrization, intermissions, and, probably, renewed extension of the ulceration, may be expected.

It is beside my present purpose to discuss the cause of these ulcers. It is now, I believe, commonly understood by physicians that they are

due to a local stoppage of the circulation, consequent upon disease of the gastric vessels, caused by a hæmorrhagic necrosis.

Rokitanski,^a Virchow,^b Pavy,^c and others, have advanced our knowledge on this subject to its present stage. I mention the question now only because the patient, M. C., ascribed the origin of her disease to a fall which occurred to her about two months before the first hæmorrhage took place. On this occasion she struck her epigastric region violently against a stair baluster, and fully believed that she felt something give way in her inside at the time. Now if, as Virchow^d states, the first condition of the formation of these ulcers be an arrest of the circulation, sufficient to permit the solvent action of the gastric juice to be exerted on the mucous membrane, no longer protected by the alkaline blood, whereby a necrosis of that structure is affected—then, possibly, an accident, such as occurred in this case, may, upon a rare occasion, have been the primary cause of the disease. For in such an accident blood may have been extravasated into the tissue beneath the mucous membrane, a main trunk may have been obstructed, something of the nature of an embolism may have been produced, with results similar in kind to those which follow this lesion in other parts.

Respecting the management of these cases, I will say but a few words. It has been determined by experience long since. Not to refer to other places, the medical literature of Dublin is enriched by many a valuable contribution upon the subject of "gastric ulcer;" and Williamson,^e Osborne,^f Adams,^g Marsh,^h Law,ⁱ and others, have given cases of great interest and instruction.

The treatment which I adopted was as follows:—*Regiminal*.—I enjoined rest in bed, and secured, as much as possible, the repose of the stomach by allowing but small quantities of nutriment to be taken, with long intervals between each meal. I confined the patients as much as could be to milk, which was admixed with a small quantity of lime-water or soda-water, and to beef-tea, which was strained and clear. The medicines I used were—internally, to *allay pain*, half a grain of opium, in form of pill, two or three times a day. To *arrest hæmorrhagic or other discharges*, gallic acid, in full doses. To *arrest and cure the ulcerative process*, bismuth in the form following, viz.:—

R.—Liquoris citratis bismuthi et ammoniæ, ʒi.

Aquæ lauro-cerasi, ʒii.

Liquoris opii sedativi, m xxx.

Aquæ fontis, ʒvii.

^a Med. Jahrb. des Oesterreichen Staates, 1839, de l'Ulcère perforant de l'Estomac.

^b Archiv. Path. Anat. V., 275.

^c Phil. Trans., 1863.

^d Handb. der Spec. Path. Therap., I., 256.

^e Dub. Jour., 1841.

^f Dub. Jour., 1845.

^g Dub. Med. Jour., XI., 494.

^h Dub. Med. Jour., XI., 461.

ⁱ Dub. Hosp. Gaz., II., 51.

Give an ounce three or four times in twenty-four hours.

To remove constipation, I ordered aperient enemata. Externally, I always applied a belladonna plaster over the seat of pain:

The efficacy of bismuth in ulcer of the stomach has been long established, and is now well recognised. In particular, as an astringent and controller of excessive glandular secretion, it has been held in high repute. My own experience enables me to fully endorse this favourable opinion; and I would beg leave, further, to submit that, in the form first introduced to medical notice by Mr. Schacht—that, namely, of the “liquor bismuthi”—it possesses something approaching *specific* curative action in this disease. What the explanation of this may be I am not able to say; I would, however, venture to suggest that, over and above the beneficial effect of the bismuth itself, this particular solution restores, *by virtue of its alkalinity*, the equilibrium in the chemical economy of the gastric processes, which had been disturbed by the initiatory pathological changes which determine the formation of a gastric ulcer.

DR. QUINLAN said that a short time ago he had a case in St. Vincent's Hospital which, to a certain extent, bore out the observations of Dr. MacSwiney. A girl, twenty years of age, who had been working in England at a sewing machine, and had undergone a great deal of hardship, was sent over to this country almost dying, and when she came into the hospital she was suffering from great pain in the epigastrium whenever she took food. She also had vomiting and hæmatemesis. Her state varied, and pain was relieved only by the subcutaneous injection of morphia. The woman died of exhaustion. On opening the stomach a number of patches of vascular injection were found near the pylorus. There was no ulcer, but he believed if she had lived a little longer the patches of injection would have ulcerated. She was an hysterical girl, such as Dr. MacSwiney had described.

DR. EUSTACE asked whether the position of the body assisted the regurgitation—whether lying on one side or the other, or leaning forward, increased the tendency to vomit. He knew of a case in which the individual, by placing herself in a certain position, caused instant regurgitation.

DR. GRIMSHAW said that he had a case at present under his care which illustrated a great many of the points Dr. MacSwiney had mentioned. The girl had been watched for several years. She came accidentally under his observation, having been suddenly attacked with vomiting of blood at the Kingsbridge Terminus, and brought therefrom to the hospital in a state of exhaustion. On her recovery, she stated that she had been previously under the care of Dr. Head in the Adelaide Hospital.

On communicating with Dr. Head, he learned that the treatment adopted by that gentleman was to give medicine and food *per anum*. Dr. Grimshaw adopted the same treatment, and the girl improved so much that she was able to get up and walk about the ward. Arrangements had even been made to send her home, when a sudden vomiting of blood came on. From this she recovered, but again relapsed, and this occurred at least four times. The treatment under which she improved was administering food by enema, and giving the stomach as much rest as possible. She was also benefited by small blisters placed over the stomach, and dressed with morphia. The pain was allayed by hypodermic injection of morphia. No connexion between the disease and the state of the uterine functions could be traced. Once or twice the patient had been subject to fits, but they were not of an epileptiform character. She suffered severe attacks of pain, which lasted for some time, and she had also severe attacks of spasmodic contraction of the arms. At first he was doubtful as to the exact nature of the case, but he was now convinced that it was a gastric ulcer, and that there had been repeated attacks of fresh ulcerations. He never knew a case in which the symptoms lasted so long, and so frequently recurred. He feared the case was incurable, but Dr. MacSwiney's paper led to the belief that more might be done in these cases than one would expect.

DR. JOHN HUGHES said he was glad to hear Dr. MacSwiney say that he did not rely on the symptoms he had described as evidencing the presence of ulcer of the stomach. Certainly, neither pain, nor vomiting, nor hæmorrhage, nor tenderness on pressure, nor loss of appetite, nor wasting, perfectly indicated the existence of ulcer of the stomach. He had seen these symptoms separately and simultaneously in the same person, but without any ulceration of the stomach. On the other hand, he had seen the existence of an ulcer of the stomach shown by *post-mortem* examination, without any previous history of dyspepsia. He believed, therefore, that they had still to look for a pathognomonic sign of gastric ulcer. Lately he saw a remarkable case of hæmorrhage from the stomach of a young woman, twenty years of age, who had never previously complained. He (Dr. Hughes) was standing by, attending a private patient, when the girl, in his presence, vomited fully three pints of blood. She was sent to hospital, remained there three weeks, and left without any sign of dyspepsia. He, therefore, thought they should endeavour to establish a standard by which they might be able to diagnose accurately cases of cancer of the stomach.

DR. MORE MADDERN held that menstrual derangement had something to do with the hæmorrhage and the other features which were present in ulcer of the stomach. Some time ago a lady from the country visited

him. She had pain in the stomach and great hæmorrhage. Every effort was made to restore the catamenia, but without effect. She returned to the country, and after some time he was telegraphed for, the patient having had a return of the hæmorrhage. Shortly after this menstruation came on, and she improved very much. Then the menses stopped, gastric pain set in, and she finally died of hæmatemesis. At present he had a lady under his care who had been seen by Drs. Hudson and M'Dowel. This lady's changes had stopped; gastric pain began, and she had repeated attacks of hæmatemesis. He had seen young girls whose menses had stopped, suffer from dyspnœa, pain in the stomach, and hæmatemesis. In cases of this kind, therefore, the plain indication was to endeavour to restore menstruation.

DR. FITZPATRICK observed that hæmatemesis was a constant effect of suppressed menstruation, and therefore no conclusion could be drawn from this symptom in relation to the question of ulcer of the stomach—the two things being totally distinct. In his opinion there was no connexion between ulceration of the stomach and uterine disease, but there was a connexion between hæmatemesis and suppressed menstruation. Dr. MacSwiney's paper was valuable as raising a discussion on an affection which was most mysterious and difficult of diagnosis. The important point in his opinion was to distinguish between hysteria with hæmorrhage and the presence of indigestible matter in the intestines, and the vomiting arising from that, even although the bowels might be in an excellent condition at the time. This was a point to which sufficient attention was not paid in medical practice. Diarrhœa might exist in a particular case, and yet there might be undigested matter in the intestine that would produce vomiting and even hæmorrhage.

MR. H. G. CROLY was surprised to hear of a doubt as to the diagnosis of ulcer of the stomach. He had seen cases where there could have been no doubt that this lesion existed, and our museums and pathological reports showed very clearly that it was not very unusual. Vomiting in gastric ulcer might be explained as it was in malignant disease of the stomach. Thus, if the ulcer occurred near the centre of the viscus, the symptom of vomiting would be by no means constant. Extensive ulceration of a portion of the stomach sometimes existed without vomiting. Surely when a young woman had pain in the back and stomach, accompanied with vomiting, one was justified in diagnosing gastric ulcer, as no other disease could produce all these symptoms. In Watson and other authors, some observations by Hunter were quoted, recommending gentle hand-rubbing of the abdomen with oil. It occurred to him (Dr. Croly) that where the administration of food by the mouth caused vomiting, inunction with cod-liver oil might be

resorted to with benefit. The internal administration of nitrate of silver might, perhaps, tend to produce the healing of the ulcer. From what he had read and seen, there could be no doubt that gastric ulcer was a curable disease.

DR. GRIMSHAW said he had tried the administration of nitrate of silver in the case detailed by him, but unsuccessfully.

The CHAIRMAN agreed with Dr. Hughes about the difficulty of diagnosis. He had seen a number of cases spread over twenty-five or thirty years, where, if gastric ulceration existed, it had been perfectly healed, and the patients restored to health. Within a recent period he had had two bad cases under his care—one a woman, and the other a man. The woman had severe pain in the back and in the front; she was anæmic-looking, wasted, and consumptive; her menstruation was defective, and, he should say that, in some of these cases, there was very marked uterine complication, showing the lowered and weakened constitution of the patient. The disease, however, was sometimes found to exist without exhibiting any sign of its presence. He had twice been called to examine persons who were not known to have had anything the matter with them, until they were suddenly seized with violent pain in the stomach, and it was found that perforation had taken place, and death ensued. He recollected a servant who was sent into Sir P. Dun's Hospital, with severe pain in the stomach, and in almost a complete state of collapse. The patient got better—she never perfectly recovered her health—but was, still, fit for certain duties in the house. In this instance, he thought perforation had gone on to cure. He recollected a case under the care of Dr. Adams, which had all the symptoms of perforation. At times the patient would say that he thought his stomach would burst, and it actually did burst afterwards, and the man died. On *post-mortem* examination, an ulcer was found close to the pylorus. With regard to hæmorrhage, he thought that, if the patients got over the shock, they were generally the better of it for a considerable time afterwards. In some cases, the hæmorrhage might come from the ulcer, but generally, he thought, it was an exudation from the surface. In the case mentioned by Dr. Quinlan, he thought the application of one or two leeches might have done good.

DR. QUINLAN explained that he would have tried leeching but for the extremely exhausted condition of his patient.

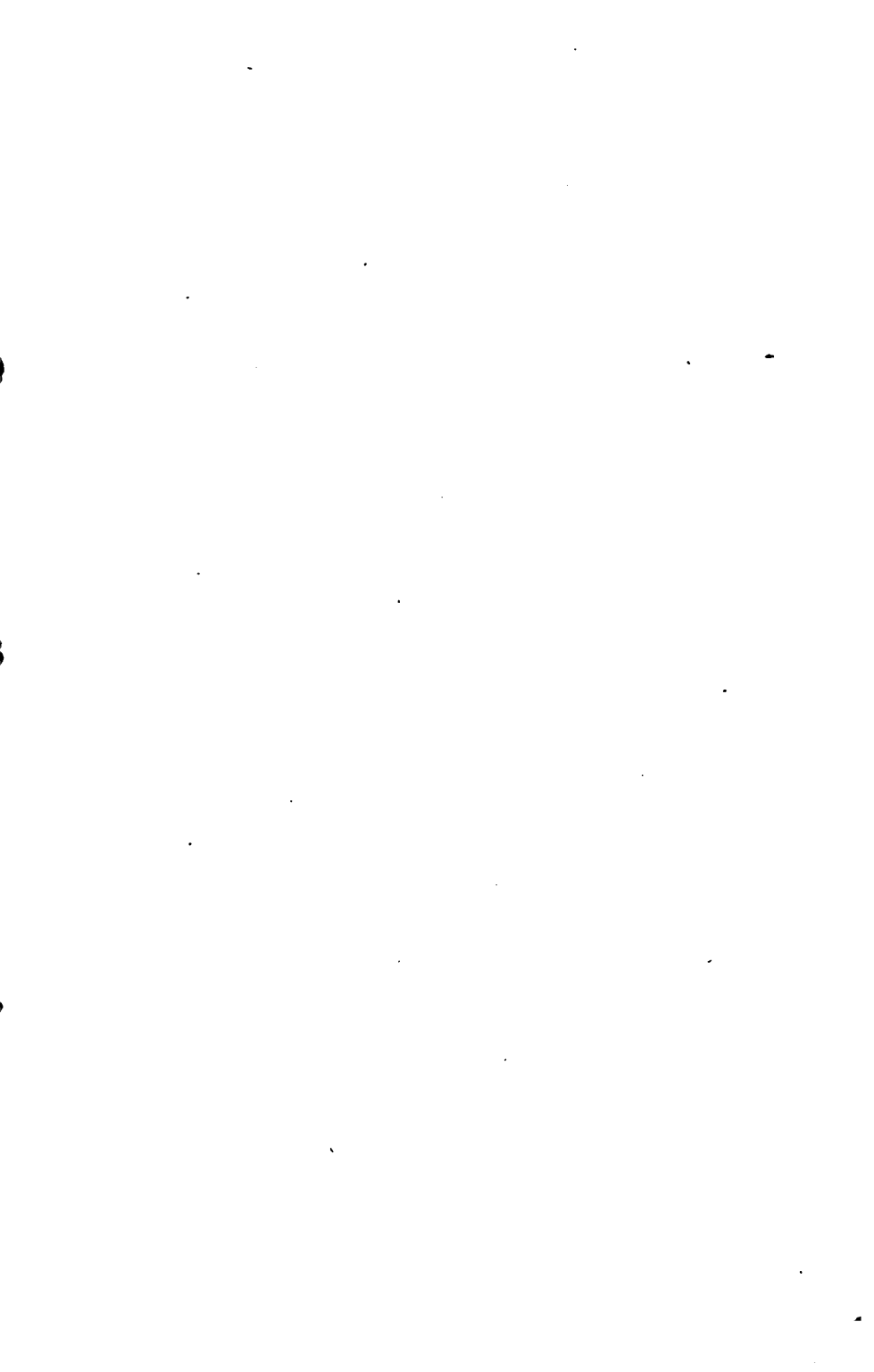
The CHAIRMAN went on to say that the two cases which had come under his notice, during the last year, had been cured by hemlock, given in the form of pills. He repeated that there was greater difficulty in diagnosing ulcer of the stomach than some supposed. Every symptom of the disease might be present without the disease; the patients got well

too quickly to admit of the conclusion that there had been an ulcer. On the other hand, there might be an ulcer without any symptoms, the first notice which the physician got of it being perforation, rapidly followed by death. It had been said that Napoleon died of ulceration of the stomach, but he believed there was some doubt about it. Having heard that the stomach was in Hunter's Museum, he made inquiries about it when lately in London, but the specimen (if it had ever been in the Museum) was not there now.

DR. MACSWINEY, in reply, said the remarks which had fallen from the members were his best justification for having brought the subject forward. As to Dr. Eustace's question, he had endeavoured to ascertain whether regurgitation was favoured by the position of the patient, but could not succeed, for this reason, that when food was taken into the stomach, it was so disagreeable and caused such annoyance that the patient rose into a sitting posture, and assisted by every means in his power in the efforts to get rid of it. He thought the decubitus of the patient bore a relation to the probable situation of the ulcer. When the patient lay on the belly the ulcer was probably situated on the posterior portion of the stomach, and when he lay on his back the reverse condition existed. Decubitus, then, in his view, depended on the anterior or posterior position of the ulcer itself. Dr. Grimshaw's case had its analogue in a case mentioned by Trousseau, where the ulcer was of an obstinate character, with repeated vomitings, and resisted all attempts to cure. He was aware that Dr. Foster, in his medical essays, recommended the administration of enemata of food and medicine as a mode of treating gastric ulcers, and Dr. Williams had reported a case where the treatment relied on was exclusively of that nature. He (Dr. MacSwiney) had not recourse to it for two reasons—one practical, the other theoretical. In the first place, he found that the patients were doing very well under the treatment which he employed. In the next place, as they were all aware, gastric juice must be periodically poured into the stomach, and the prevalent opinion among those who were looked on as authorities on these subjects was that the gastric juice plays a most important part in the formation of ulcers, the excavation being caused by the solvent action of the juice. This was the opinion of Rokitsanski, Virchow, and Cruveilhier. Therefore, he was disposed to think they might act injuriously by resorting exclusively to the administration of nutritive enemata, and leaving the stomach wholly without food, upon which the gastric juice could act. It could not be denied that the diagnosis of gastric ulcer was difficult, and he had specifically recognised that difficulty in his paper; but he thought Drs. Hughes and Fitzpatrick carried that view too far; for surely, as Mr. Croly said, "If you have a case in which there is pain fixed in one situation, with

vomiting, this being increased by taking food, and the vomiting relieving the pain; and if, in addition, there be constipation and vomiting of blood, and all this occurring in females at a certain age—you can scarcely imagine any other morbid condition to which this state of things can be referred except ulcer of the stomach. The case of Hunter's, to which Mr. Croly referred, was not described by him as a gastric ulcer, for it was not until the year 1830 that Cruveilhier described that disease. Gastric ulcer seldom if ever occurred in a child so young. Nitrate of silver was relied on in these cases by Trousseau and all the French physicians. He did not think the vomiting depended on the situation of the ulcer; for in cases of gastric ulcer the presence of food was so distressing that the patient endeavoured to get rid of it; the vomiting was an effort at relief, and was totally independent of the situation of the ulcer. The cases mentioned by the Chairman corroborated the views expressed in his paper as to both the difficulty of diagnosis and the variety and uncertainty of treatment. Finally, he (Dr. MacSwiney) desired to observe that he could not concur in the opinion that the diagnosis of gastric ulcer could not be made with certainty, under circumstances such as accompanied the cases he had now reported.

The Society then adjourned.





DRAWING OF PIECE OF SCULPTURE REPRESENTING THE CIRCUMSTANTIALS OF PARTURITION.

Supposed date—500 years B.C.

The upper part of the figures of the attendant and of the nurse are wanting, but are supplied in the above drawing by the dotted lines.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-SEVENTH ANNUAL SESSION.

Saturday, 9th January, 1875.

LOMBE ATTHILL, M.D., President, in the Chair.

THE PRESIDENT said before the business of the evening commenced he had the pleasure of presenting to the Society a cast of a piece of sculpture of great interest, which he had received as a donation to the Society from Mr. S. H. Bibby, of London. The original was dug up in a Temple of Venus in the Island of Cyprus not long ago, and consisted of a group of four figures, representing the circumstantial of parturition—the mother, the nurse, the new-born infant, and an attendant, were delineated. The group was interesting chiefly on account of its exemplifying the mode of delivery on stools mentioned in Exodus, and was supposed to be very rare. Mr. Bibby had presented another copy of the group to the Obstetrical Society of London, and had the honour of explaining it to the Fellows at a recent meeting.

DR. CHURCHILL, in moving that the warm thanks of the Society be given to Mr. Bibby for his interesting present, said the mode of delivery on a stool or chair was very ancient, but it was not ancient in the sense that it was not modern. He himself had seen a chair in Edinburgh which had been used for that purpose up to the time of Dr. Hamilton.

DR. M'CLINTOCK seconded the motion of thanks to Mr. Bibby.

DR. KIDD said it was stated in a great many of the text-books that it was the custom in Ireland to have women delivered sitting on a chair, or between two chairs. Perhaps some member of the Society could say whether that was the custom in any part of Ireland.

DR. J. A. BYRNE said this interesting cast recalled to his mind a statement made to him a few years ago by a nurse-tender who had been a long time in Greece, in attendance on a Greek lady in a high position. She said she had seen her mistress delivered on two occasions, and that the Greek physicians used a mode of delivery apparently similar to that represented in the group before the Society. They put the female in a

kind of raised chair, with a semi-circular opening in front to accommodate the descent of the head of the fœtus.

The vote of thanks was adopted, and the Secretary directed to communicate it to Mr. Bibby.

A Report of the Rotundo Lying-in Hospital for the year 1874. By GEORGE JOHNSTON, M.D., F.K. & Q.C.P., Master of the Hospital.

GENTLEMEN,—The sixth year of my mastership having come to a close, I consider it incumbent upon me to continue to render my annual account of the state of the hospital.

And in doing so, I beg leave to impress upon your minds that I have no theory of my own to promulgate. The only object I have is, that, by giving an accurate and faithful detail of the occurrences which took place in the hospital, a fair conclusion may be arrived at as to whether a large maternity is as safe, if not safer, for those seeking its advantages, than if they were confined in their own homes, or elsewhere.

In the first instance, I have every reason to be thankful in being able to say that our sanitary state has been so much improved during the past year, over any of the preceding ones, that, although there has been a greater number of deliveries during the period, the mortality is less than half what it was the year before.

Thus, if we compare the list of previous years with the past one, we find that in the year ending—

Nov. 5th, 1869, there were 1,159 deliveries, and 25 deaths from all

					causes,
„	1870	„	1,087	„	27
„	1871	„	1,161	„	33
„	1872	„	1,193	„	20
„	1873	„	1,191	„	32
„	1874	„	1,236	„	15

And this diminution in the number of deaths, notwithstanding the great prevalence of zymotic sickness of every kind—viz., scarlatina, rubeola, typhus and typhoid fever, erysipelas, &c., outside the hospital—is remarkable, more particularly when we take into consideration the various circumstances of the individuals, or the acute complaints they were suffering from either at the time of their admission, or which made their appearance shortly after their confinement. For instance, we had 47 cases of fretting from seduction; 7, deserted by husband; 3, ill treated by husband; 3, husband died shortly before their coming in; 20, extreme delicacy of health, and, of course, very susceptible of puerperal complications; 44, acute bronchitis; 3, jaundice; 1, gastritis; 5, convulsions; 2, epilepsy; 5, mania, 1 of which ended in

apoplexy; 2, phlegmasia; 1, phlebitis; 13, peritonitis; 1, pyæmia; 4, syphilis; 1, lacerated wound over sacrum, extending into right labium; 2, fever; 1, typhus; 1, typhoid; 2, diarrhœa; 2, erysipelas; 2, rubeola; 15, scarlatina; 5, rheumatism.

Thus showing we were not exempt from the usual dangers and difficulties attendant on a large maternity, particularly an institution such as ours, whose doors are open to every one, without either note of admission or recommendation (the only passport required being that they stand in need of our assistance).

This low death-rate, I may say, is, in a great measure, attributable to the strict attention to cleanliness that is observed, and in having a constant current of external air permeating through the wards and corridors, thereby diluting the atmosphere (hospital, if you will) with such an amount of pure air as to render the "poison" (if any) that may exist perfectly innocuous.

This purity of atmosphere and absence of any hospital odour has been constantly observed by very many visitors, medical and otherwise, who, after having gone round and examined the different wards, have recorded their testimony in the book kept for that purpose, thus corroborating the truthfulness of my statement.

Besides which, I must add, the practice we now adopt of interfering, to prevent the labour being protracted, not only saves the lives of many children which would otherwise be destroyed, but also the mother from the evil consequences we know to have arisen from exhaustion, and the long-continued pressure on the soft parts, engendering sloughing of the vagina, peritonitis, or pyæmia.

During the year ending 5th November, 1874,

1,236 patients were delivered in the hospital.

153 " " at their own homes.

254 " were treated in the wards for female complaints.

4,927 " were prescribed for at the dispensary, and one half of
 which were treated for diseases of the womb in the
 gynæcological department, making in all

6,570 patients relieved during the year.

Of the 1,236 patients delivered in the hospital, 997 were purely natural labour (see Table No. 1)—i.e., the labour terminated within 24 hours, the head presented, and the child was born by the natural efforts.

In 40 instances the labour lasted over 24 hours. The greater number were cases which had been under the care of practitioners, or midwives, outside, who, finding them going beyond their skill, sent them in.

There were 45 cases where the ovum was expelled within the sixth month of gestation. We had 23 cases of twin births. In 3 instances the child presented with the upper extremity, and 45 with the lower.

TABLE 1.—*Monthly Abstract of Deliveries, Casualties, &c.*

1873 and 1874	Total Number of Deliveries	Natural Labour	Labour exceeding 24 hours	Twins	Triplets	Abortions	Prenatal Presentations		Difficult Labour Mode of Delivery				Chloroform	COMPLICATIONS									CASUALTIES											
							Upper Extremity	Lower Extremity	Forceps	Craniotomy	Version	Labour Induced		Accidental Hemorrhage	Placenta Previa	Post Partum Hemorrhage	Retained Placenta	Protrusion of Funis	Convulsions	Epilepsy	Apoplexy	Mania	Rubeola	Scarlatina	Pertussis	Phthisis	Pyæmia	Phlegmon	Erysipelas	Typhus	Typhoid	Bronchitis	Gastritis	
From Nov. 6,	89	73	1	2	-	2	-	1	10	-	1	-	7	1	1	-	2	-	1	1	-	1	1	-	-	-	-	-	-	-	-	4	-	2
December,	98	79	4	3	-	1	-	4	14	-	1	-	10	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	1	-	
January, -	88	74	3	2	-	6	-	4	5	-	-	-	6	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	8	-	2	
February, -	96	74	2	2	-	1	-	4	16	-	-	-	10	-	1	3	1	-	1	2	-	1	2	-	1	-	-	-	-	-	2	-	-	
March, -	100	80	2	2	-	5	1	2	10	-	2	-	8	1	-	2	2	1	-	-	-	-	3	-	-	-	-	-	-	-	4	-	2	
April, -	119	102	2	3	-	6	-	6	7	-	4	-	6	1	1	-	1	1	-	-	-	1	1	3	-	-	-	-	-	-	4	-	4	
May, -	107	88	4	1	-	1	-	2	13	-	-	-	7	1	-	1	-	-	-	1	-	1	2	-	-	-	-	-	-	-	4	-	1	
June, -	95	82	7	2	-	2	1	6	11	-	1	-	10	-	1	3	-	3	1	1	-	-	1	4	-	-	-	-	-	-	3	-	1	
July, -	122	100	6	1	-	2	-	1	16	-	-	-	12	-	-	3	-	-	-	-	-	2	-	2	-	1	1	-	-	-	4	-	1	
August, -	104	76	4	4	-	7	1	3	13	-	3	-	12	2	1	3	-	3	-	-	-	-	1	1	-	-	-	-	-	1	2	-	1	
September,	118	84	2	1	-	10	-	7	16	-	1	-	9	1	-	5	-	2	1	-	-	2	-	-	-	-	-	-	-	1	3	-	1	
October, -	83	71	3	-	-	2	-	4	6	-	-	-	6	-	-	4	-	4	-	-	-	1	1	-	-	-	-	-	-	-	3	-	-	
To Nov. 5, -	17	14	-	-	-	-	-	1	1	-	1	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	1236	997	40	23	-	45	3	45	138	-	14	-	104	7	6	25	7	13	6	3	1	5	2	15	13	2	1	2	1	1	1	44	1	15

In 138 cases we deemed it advisable to employ the forceps. In no one instance was it necessary to use the perforator. Version was performed in 14 instances.

7 patients were admitted with accidental hæmorrhage; 6 with placenta prævia; there were 25 cases of *post-partum* hæmorrhage, but mostly of a trivial character; the placenta was retained in 7 instances; prolapse of the funis occurred in 13 instances; we had 5 cases of convulsions; 2, epileptic; 5, mania, 1 of which died of apoplexy. Chloroform was used in labour 104 times.

We had 15 deaths from all causes, being an average of 1 in 82½, and by referring to the Table No. 2 it will be seen that 9 were of a zymotic type—viz., 3 scarlatina, 3 peritonitis, 1 pyæmia, 1 typhus, and 1 typhoid fever.

The 1st case of scarlatina was in a female aged 22, a primipara, *seduced*; was confined of a boy after a natural labour of 14 hours, 1 of which occupied the second stage; placenta expelled in 10 minutes; no P. P. H.* Scarlatina symptoms showed themselves in 39 hours after delivery; throat became greatly congested; she died on the third day of the attack.

The next case, aged 26, was confined of a boy, first child, living, after a natural labour of 7 hours, second stage occupying three-quarters of an hour; placenta expelled in 15 minutes; no P. P. H. It was remarked at the time that her face and neck presented a flushed appearance, with the eyes somewhat suffused. The disease showed itself distinctly in 41 hours. Some peritoneal symptoms appeared on the ninth day, and she died on the thirteenth after confinement.

The third case, also a primipara, aged 31, innupta; her labour was tedious, 27 hours' duration, owing to early rupture of the membranes; the os was slow in dilating; we had to deliver her with a forceps of a girl, living; third stage lasted only 5 minutes; no P. P. H.; 51 hours after seized with diarrhœa; eyes suffused; the skin assumed a dusky hue; pulse 128; muttering inarticulately; rash appeared the following day. Ascertained that she had been drinking hard from the time she found she was pregnant, say for 7 months. She rapidly sank, and died on the second day after the diarrhœa appeared. No uterine or peritoneal symptoms whatever.

The first case of *peritonitis* was in a woman aged 28, her first pregnancy; admitted in a state of great delicacy of health; deeply scarred with small-pox, which destroyed one eye; she was confined of a putrid child (boy) after a natural labour of 13 hours, the second stage occupying 3 hours; placenta expelled in 10 minutes; no P. P. H. Symptoms of peritonitis set in the following morning, 15 hours after confinement, which gradually increased, and she sank on the sixth day.

* *Post-partum* hæmorrhage.

TABLE No. 2.—Deaths from all Causes.

No.	Date of Delivery	Date of Death	Ward	Bed	Age	No. of Pregnancy		Cause	Observations
						1st	Subst.		
1	Nov. 14	Nov. 15	6	67	40	—	11	Placenta Previa	Complete; Barnes' dilator introduced, and as soon as os was sufficiently dilated, version performed; died in 1½ hours; p. m.; laceration of vagina and cervix.
2	" 18	" 25	8	86	24	1	—	Apoplexy	Violent mania 3rd day; chloroform for 6 hours; 4th, eyes suffused; sickness of stomach; coma.
3	Dec. 30	Jan. 8	3	BL. Wd.	18	1	—	Convulsions	Seduced; brought in unconscious; delivered of twins in 12 hours; consciousness returned following day; fretting extremely; peritonitis on 5th day.
4	Jan. 23	" 28	8	Private	22	1	—	Scarlatina	Seduced; rash appeared in 48 hours after confinement.
5	Feb. 22	Mar. 5	7	BL. Wd.	26	1	—	Scarlatina	Pulse quick; eyes suffused; rash appeared immediately after confinement; peritonitis on 3rd.
6	Mar. 9	" 13	1	3	31	1	—	Scarlatina	Seduced; drunkard; symptoms in 51 hours after confinement, and died in 48 hours; no abdominal or uterine symptoms whatever.
7	" 27	April 8	5	49	22	1	—	Bronchitis	Admitted with acute bronchitis; delivered with the forceps.
8	April 6	" 12	6	68	28	1	—	Peritonitis	Delicate looking on admission; child putrid; labour natural; very ill; peritoneal symptoms set in within 24 hours.
9	" 13	" 17	2	17	25	1	—	Pyæmia	Set in day after, with great weakness; collapse.
10	" 18	" 21	2	18	30	1	—	Peritonitis	Slow and stupid in replying to questions; 18th peritoneal symptoms set in.
11	" 17	May 1	4	43	21	1	—	Sloughing	Delicate on admission; labour tedious in first stage, from early rupture of the membranes; os 2-5ths dilated; forceps; sloughing of vagina; peritonitis supervened.
12	June 2	June 11	12	115	28	1	—	Peritonitis	Fretting; delay in first stage, owing to early rupture of the membranes; os 2-5ths dilated; forceps.
13	July 5	July 12	7	59	30	1	—	Fatty degeneration of Kidneys, Liver, and Heart	Seduced; admitted with plegmasia of both legs; labour natural; mania on 5th day; suppression of urine; 11th jaundiced.
14	Aug. 14	Aug. 30	2	20	31	—	7	Typhoid Fever	Admitted very weak from accidental hemorrhage; membranes ruptured; labour natural; diarrhoea with low fever on 4th day.
15	Sept. 19	Sept. 23	8	83	30	—	2	Typhus	Ill for nearly three weeks before admission in low typhus; peritonitis supervened.

The second was also a primipara, aged 30, a case of *seduction*; found great difficulty in getting her to reply to any questions; fretting greatly; she was confined of a boy, dead, after a natural labour of 10 hours; second stage of only 1 hour's duration; placenta expelled in 5 minutes: no P. P. H. Peritoneal symptoms developed themselves on the fifth day, and she sank in 3 days after.

The third, a case of peritonitis, with pyæmia, occurred in a patient, aged 21, her first labour, which lasted 30 hours. There was great delay in the first stage, the membranes having been ruptured early, for which she was treated. When the os was $\frac{3}{4}$ ths dilated she was put under chloroform, and delivered with the forceps of a girl, weight 7 lbs. 6 ozs., which lived; placenta was expelled in 8 minutes; no P. P. H. She went on well till the sixth day, when peritoneal symptoms set in, and she died on the third day after the attack.

At *post-mortem* examination the os was not more fissured than under ordinary circumstances, but a separation of the symphysis pubis was discovered with purulent deposit.

Pyæmia occurred once, in a primipara, aged 25; her labour was slow in the first stage, 18½ hours, the second lasting 1½ hours; she gave birth to a girl, 7 lbs. 12 ozs., by the natural efforts; placenta was expelled in 10 minutes; no P. P. H. The following day her pulse was found very weak and quick; thermometer, 107; no abdominal tenderness or tympany. On the second she was found in a state of collapse; pyæmic patches over back of hand and fingers, forearm, and right shoulder. She died on the fourth day after confinement.

Typhoid.—This case, aged 31, her seventh pregnancy; admitted in a very weak state from accidental hæmorrhage, which had commenced some weeks previously; suffering also from bronchitis, from which she has been suffering for the last month; she gave birth to a male child—weight, 6 lbs. 12 ozs., delicate—after a natural labour of 2 hours; second stage, ¼ hour; no P. P. hæmorrhage. On the fourth day diarrhœa, with low fever, set in, from which she sank on the third day of the attack.

Typhus Fever.—This case, aged 30, her second pregnancy, had been ill in fever for the last fortnight; admitted with pulse 130; tongue furred; came in at night, so we could not send her to the Fever Hospital; her labour lasted only 6 hours; ¾ hour in the second stage; gave birth to a boy by the natural efforts—weight, 5 lbs. 4 ozs.—which lived. Only complained of extreme weakness. Her strength was supported, but she never rallied, and sank on the fourth day.

6 were of an accidental nature (if I may so say)—i.e., were not zymotic.

1 was a case of *complete placenta prævia* in her eleventh pregnancy, aged 40; admitted in a state of extreme exhaustion; os found high up, $\frac{1}{2}$ th dilated; No. 1 Barnes' dilator was introduced, and, after 2 hours, No. 3 was passed; in half an hour the os was found fully dilated, the hand could be passed readily, version was performed, and a boy was extracted alive, weighing 6 lbs. 10 ozs. (lived); the placenta followed immediately, but the draining could not be restrained; we were about performing transfusion, but before arrangements could be made she died. *Post-mortem* examination showed a laceration of the vagina into the cervix of fully 3 inches.

1, a case of *apoplexy*, aged 24; first pregnancy; her labour was of 18 hours' duration, but slow in the second stage, head being arrested in the cavity for 5 hours; we were obliged to assist the delivery with the forceps; placenta was expelled in 5 minutes; no P. P. H.; went on well till 5 p.m. of the fourth day, when violent mania set in, attributed to disappointment at her friends not coming to see her; her screeching and violence were so great we found it necessary to put her under the influence of chloroform before quiet could be restored. The following day she was more tranquil; eyes still suffused. 5 p.m.—Perfectly rational, and continued so till the following day, when she was attacked with sickness of stomach; suffusion of eyes increased. She fell into a state of coma, from which she never rallied, and died on the third day from the attack.

1, *convulsions*, a young woman, aged 18; seduced; first pregnancy; brought in in convulsions, which commenced 12 hours before admission, during which time she had 7 fits; os barely would admit the finger. She was kept under the influence of chloroform; os gradually dilated, when a breech was found presenting, and was readily extracted; a second, also breech, was removed; placenta expelled in 10 minutes; some P. P. H., requiring cold injections. On the third day, when consciousness returned, she began to fret extremely; complained shortly after of tenderness of abdomen: all the symptoms of peritonitis set in; she became maniacal on the sixth day, and sank 2 days after.

1, *bronchitis*, a young woman, aged 22, a primipara; admitted with acute bronchitis, which she had been labouring under for the last fortnight; great dyspnoea, in consequence of which her labour had to be assisted with the forceps; placenta expelled in 15 minutes; no P. P. H. She gradually sank on the twelfth day after her confinement.

Post-mortem examination.—The uterus was found well contracted; no peritonitis.

1, *sloughing of vagina* occurred in a delicate little creature, suffering

from cold caught a fortnight before, aged 21; primipara; her labour was tedious in the first stage, waters having escaped 26 hours; the usual means were adopted, when the os was found $\frac{3}{4}$ ths dilated and yielding. The head was above the brim, and a caput succedaneum formed, owing to disproportion. Parts becoming hot, she was put under chloroform. The forceps were applied, and the child, a boy—weight, 8 lbs. 6 ozs.—extracted with difficulty; placenta was expelled in 5 minutes; no P. P. H. Diarrhœa set in the day after; sloughing of the vagina and perinæum followed; but, owing to extreme delicacy, her system could not bear up against it, and she gradually sank on the fourteenth day.

Hepatic and Renal Disease.—M. M., aged 20; seduced; a primipara; admitted with phlegmasia of both legs; was delivered of a girl, living—weight, 4 lbs. 4 ozs.—in the seventh month; labour natural, 12 hours duration, second stage occupying 4 hours; placenta expelled in 10 minutes; no P. P. H.; was very silent from the commencement; difficult to get her to answer questions; overlay her child the day after; became maniacal on the fifth day; system gave way at once; became jaundiced on the sixth day, and she died on the seventh.

Post-mortem examination showed extensive disease of the liver, heart, and kidneys; uterus well contracted and healthy; peritoneum slightly congested; a small quantity of fluid in the uterine region.

LABOUR EXCEEDING 24 HOURS.

There were 40 cases where the labour exceeded 24 hours; 34 in primiparæ, and 6 in pluriparæ. All of the primiparous patients were delivered with the forceps, except 1, in which the child was expelled by the natural efforts. 3 pluriparous patients were delivered with the forceps; 1 by version; 2 by the natural efforts.

Of the 40 cases—

11 were 25 hours in labour, 9 of which were primiparæ.

5	"	26	"	5	"	1 mother died.
3	"	27	"	2	"	
11	"	30	"	11	"	1 mother died.
1	"	31	"	0	"	
1	"	32	"	1	"	
1	"	35	"	0	"	
1	"	38	"	1	"	
5	"	40	"	4	"	
1	"	46	"	1	"	

40

34

Of the children—

21 male children lived, 19 of which were of primiparæ; 2 of pluriparæ.

11 female	"	10	"	1	"
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5 male died,		3	"	2	"
--------------	--	---	---	---	---

3 female „		2	"	1	"
------------	--	---	---	---	---

—		—		—	
40		34		6	

38 mothers recovered; 2, primiparæ, died.

ABORTIONS.

There were 45 cases of abortion—i.e., the ovum was expelled at some period from the sixth week to the sixth month. 9 of these were primiparæ.

23 were cases within 3 months—viz., 5 in the sixth week, 1 of which was primipara; 7 in the eighth week, 1 of which was primipara; 11 in the twelfth week, 1 of which was primipara. 22 were cases from the fourth to the sixth month—viz., 4 in the fourth month; 1, a primipara, was delivered of a boy, putrid, owing to a fall; 1, her third pregnancy, delivered of a boy, dead, owing to fretting; 1, her fourth pregnancy, delivered of a girl, dead, owing to partial placenta prævia; 1, her thirteenth pregnancy, delivered of a boy, dead, owing to over-exertion. 1 in the fifth month, her eleventh pregnancy, delivered of a boy, dead, owing to fall.

There were 17 in the sixth month, 5 being primiparæ—viz., 3 boys putrid and 2 girls do.; one of the latter was the second of twins, the first child being alive, healthy, and at term.

Of the 12 pluriparæ, 4 were second pregnancies; 1 was delivered of a girl, dead, owing to delicacy; 1 was delivered of 2 girls, 1 of which lived 1½ hours, second lived for 38 hours; 1 was delivered of a boy, putrid, attributed to general delicacy; 1 was delivered of a boy, which lived for 5 minutes, attributed to fright. 1, her third pregnancy, was delivered of a boy, which lived for 15 minutes, cause hæmorrhage. 1, her fourth pregnancy, was delivered of a girl, dead, owing to over-exertion. 3 were in their fifth pregnancy; 1 was delivered of a girl, putrid, footling, her last four were premature, no cause assigned; 1 was delivered of a girl, dead, no cause assigned; 1 was delivered of a girl, putrid, result of a fall. 1, her sixth pregnancy, was delivered of a boy, putrid, could not account for it. 1, her seventh pregnancy, was delivered of a girl, dead, attributes it to sickness and general delicacy; 1, her eighth pregnancy, was delivered of a boy, dead, from partial placenta prævia. All the mothers recovered.

In primiparæ the children were all putrid, and the majority was on the male side—3 boys, 2 girls.

In pluriparæ 3 were living when born—viz., 2 boys and 1 girl.

5 were dead	„	1	„	4	„
4 were putrid	„	2	„	2	„
		<hr/>		<hr/>	
		5		7	

Thus the majority of dead and putrid children were on the part of the girls—viz., 6 girls to 3 boys.

PREMATURE BIRTHS.

There were 51 cases of premature confinement—viz., 31 in the seventh month, and 20 in the eighth month.

Of those whose labour took place in the seventh month, 8 were *primiparæ*, and gave birth to 5 boys, 4 of which were living—1 was putrid—and 4 girls, there being 1 case of twins. All were born alive, but 3 died, viz., 1 of the twins in 8 hours; 1 was overlain on the third day, and 1 died on the seventh day.

Of the 4 boys which were born alive, 1 died in 12 hours, 1 in 24 hours, 1 the fourth day, and 1 lived. All the mothers recovered but 1, who died of hepatic and renal disease.

Of the 23 *pluriparæ*, 7 gave birth to boys, 2 being alive, 2 dead, and 3 putrid; and 17 gave birth to girls, there being a case of twins, 7 being alive at birth, 1 was dead, and 9 putrid. Of the 2 boys born alive, 1 died the second day, and 1 on the tenth day. Of the 7 girls born alive, 2 lived; 5 died—2 in 17 hours; 2 on the third day, 1 of which was a twin; and 1 on the fifth day, also a twin. All the mothers recovered.

Of those whose labour took place at the eighth month, 10 were *primiparæ*, and gave birth to 3 boys, 2 of which were alive at birth, but 1 died on the second day, the third was putrid at birth; and 7 girls—5 were alive at birth, 3 of which died, 2 on the third day, 1 on the fourth. The 10 *pluriparæ* gave birth to 4 boys, 3 being alive, but 2 died—1 in 17 hours, 1 on the fourth day, 1 was putrid; and 6 girls, 5 alive and lived, 1 was putrid. All the mothers recovered.

TWINS.

There were 24 cases where the mother had twins, 1 of which was at 6 months, her second pregnancy; she gave birth to 2 female children, weighing each 2 lbs. 8 ozs.; 1 lived for 1 hour, the second lived for 39 hours. This case comes under the category of abortions. 1 mother, a *primipara*, *innupta*, who had convulsions, followed by mania, died. Of the 23 others, 7 were *primiparæ*, and 16 *pluriparæ*.

Of the 7 *primiparæ*, in 3 the children were of both sexes. In one the first born was a female, weight 4 lbs. 6 ozs., presented with the head; the second, a boy, also head presentation, weighed 5 lbs. 10 ozs.; both were delivered with the forceps; both lived; mother recovered.

TABLE 3.—*Premature Births.*

Date		SEVEN MONTHS' CHILD									
		No. of Pregnancy		Sex of Child		Weight		Lived or Died	Recovered	Died	
		1st	Subt.	M.	F.	lbs.	ozs.	Died in			
1873, Dec. 8,	-	-	4	A.	-	3	0	40 hr.	13	-	
1874, Jan. 7,	-	1	-	A.	A.	3	8	12 hr.	15	-	
	-	-	-	-	-	3	2	8 hr.			
January 14,	-	-	7	-	P.	3	14	-	19	-	
February 5,	-	1	-	A.	A.	4	4	7 day	13	-	
" 8,	-	-	15	-	A.	2	6	17 hr.	15	-	
" 20,	-	-	2	-	P.	4	2	-	28	-	
March 14,	-	-	3	-	A.	3	12	5 day	22	-	
	-	-	-	-	-	4	0	3 day			
April 14,	-	1	-	A.	-	4	12	24 hr.	20	-	
" 18,	-	-	4	-	D.	4	0	"	22	-	
" 27,	-	-	5	-	P.	3	8	"	3	-	
" 28,	-	-	8	D.	-	3	6	"	3	-	
May 1,	-	-	4	-	P.	4	8	-	8	-	
" 2,	-	-	10	P.	-	5	0	-	9	-	
" 13,	-	-	14	-	A.	3	12	Lived	20	-	
" 17,	-	-	4	-	P.	3	6	-	25	-	
June 2,	-	-	3	-	P.	2	0	-	9	-	
" 8,	-	1	-	-	A.	3	6	Lived	16	-	
" 14,	-	-	12	-	A.	3	12	17 hr.	23	-	
" 14,	-	-	6	-	P.	3	4	"	20	-	
" 21,	-	-	12	-	A.	3	3	3 day	27	-	
" 28,	-	-	23	D.	-	3	15	-	4	-	
July 5,	-	1	-	-	A.	4	4	3 day	-	12	
" 9,	-	-	4	-	P.	3	4	-	16	-	
" 13,	-	-	2	P.	-	3	0	-	20	-	
August 4,	-	-	8	-	A.	3	4	Lived	11	-	
" 9,	-	-	5	A.	-	4	0	2 day	15	-	
" 27,	-	-	2	P.	-	2	11	-	2	-	
September 5,	-	1	-	P.	-	5	4	-	12	-	
" 16,	-	-	6	-	P.	3	6	-	24	-	
" 25,	-	1	-	A.	-	3	8	4 day	2	-	
October 9,	-	1	-	A.	-	4	2	Lived	16	-	
		8	23	12	21			4 Liv'd 13 Di'd	30	1	
		31		A. 6 D. 2 P. 4	A. 11 D. 1 P. 9						
				12	21						

	SEVEN MONTHS—Result to Children									
	Born Alive		Born Dead		Born Putrid		Lived		Died	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Primipara,	4	4	-	-	1	-	1	1	3	3
Pluripara,	2	7	2	1	3	9	-	2	2	5
Total,	6	11	2	1	4	9	1	3	5	8

TABLE 4.—*Premature Births.*

Date	EIGHT MONTHS' CHILD									
	No. of Pregnancy		Sex		Weight lbs. ozs.	Lived or Died	Result to Mother			
	1st	Subt.	M.	F.						
November 11, - - -	1	—	L.	—	5 2	Died in 13 hr.	Recovered 18th			
December 1, - - -	1	—	—	P.	3 6	P.	„ 7th			
„ 1, - - -	—	8	L.	—	5 14	Lived	„ 8th			
„ 10, - - -	—	3	L.	—	3 12	14 hr.	„ 19th			
„ 11, - - -	—	5	—	L.	3 14	Lived	„ 18th			
„ 25, - - -	1	—	—	L.	3 6	Lived	„ 1st Jan.			
March 18, - - -	1	—	—	L.	5 5	4 day	„ 26th			
April 20, - - -	—	7	—	L.	5 6	Lived	„ 27th			
June 8, - - -	—	4	—	P.	5 12	P.	„ 14th			
„ 17, - - -	—	3	—	L.	4 8	Lived	„ 24th			
August 6, - - -	—	2	—	L.	4 12	Lived	„ 15th			
„ 24, - - -	—	2	L.	—	5 4	17 hr.	„ 1st			
„ 27, - - -	1	—	—	P.	3 0	P.	„ 2nd			
„ 27, - - -	1	—	P.	—	3 13	P.	„ 3rd			
„ 28, - - -	—	8	—	L.	4 0	Lived	„ 4th			
September 6, - - -	1	—	L.	—	4 2	Lived	„ 13th			
„ 8, - - -	1	—	—	L.	4 0	3 day	„ 14th			
„ 8, - - -	1	—	—	L.	4 4	Lived	„ 16th			
October 19, - - -	1	—	—	L.	5 12	3 day	„ 23rd			
„ 21, - - -	—	2	P.	—	3 0	P.	„ 23th			
	10	10	A. 5 P. 2	A. 10 P. 3						
	20		7	13						

	EIGHT MONTHS							
	Born Alive		Born Putrid		Lived		Died	
	M.	F.	M.	F.	M.	F.	M.	F.
Primipara, - -	2	5	1	2	1	2	1	3
Pluripara, - -	3	5	1	1	1	5	2	—
Total, - -	5	10	2	3	2	7	3	3

The second case was at the seventh month, mother very delicate; the first, a boy, presented with the head, and was born without assistance, weighed 3 lbs. 8 ozs.; the second, a girl, was a breech presentation, weighed 3 lbs. 2 ozs.; both were alive at birth, but the girl died in 8 hours, and the boy in 11 hours; mother recovered. In the third both children presented with the head, and were expelled by the natural efforts; the first was a boy, weighed 4 lbs. 14 ozs.; the second, a girl, 5 lbs. 8 ozs.; both alive at birth; the boy was overlain on the sixth day, the girl lived; mother recovered.

Of the 4 primiparæ where the children were of one sex, 3 gave birth to girls. In one of these the mother, innupta, was admitted in convulsions, as before mentioned, and died the eighth day. The second case was at the seventh month; the first child presented with the head, and was delivered naturally, weighed 3 lbs. 12 ozs., lived; the second was expelled in the membranes, was blighted, and did not appear to be more than at the beginning of the sixth month, no cause could be assigned for it; the mother recovered. The third, also about the seventh month, was similar to the foregoing; the first presenting naturally, alive, weighed 2 lbs. 4 ozs., died on the second day; the second child, expelled in the membranes, was putrid; mother recovered. The fourth gave birth to 2 boys; both presented with the head, and were expelled by the natural efforts, and both lived; weighed respectively 5 lbs. 2 ozs. and 4 lbs. 12 ozs.; the mother recovered.

Of the 16 pluriparæ, in 8 cases the children were of both sexes, and were born as Table No. 5 will show.

Thus, in the 1st children the head presented in 5 instances, 3 being boys, 2 girls, all of which lived; the breech presented in 3 instances, 1 being a boy, 2 girls, all lived. In the 2nd children the head presented in 2 instances, 1 being a boy, 1 girl, all of which lived; the breech presented in 5 instances, 2 being boys, 3 girls, all lived; the arm presented in 1 instance—being a boy—died in 5 hours.

Mode of Delivery.—In the 1st children, when the head presented, all were delivered by the natural efforts; where the lower extremity presented, they were assisted. In the 2nd children, where the head presented, it was expelled by the natural efforts; when the lower extremity presented they were assisted; in the case of arm presentation version was performed. All the mothers recovered; 15 children lived; 1 died.

Of the 8 cases where the children were of the same sex, in 4 both were male, and in 4 both female; and, as will be seen by Table No. 6, in 2 cases it was their 2nd pregnancy; in 1 it was her 3rd; in 2 their 4th; in 1 her 5th; in 1 her 10th; and in 1 her 12th pregnancy.

In the 4 cases where there were 2 boys, the first child in all presented with the head, and was expelled in 3 by the natural efforts; in 1 the forceps was applied.

TABLE 5.—TWINS.—Of the 16 Pluriparae, in 8 cases the children were of both sexes, and were born as follows:—

No.	FIRST CHILD						SECOND CHILD						Result to Mother		
	Sex		Mode of Presentation		Mode of Delivery	Weight or Dead lbs. ozs.	Alive or Dead	Sex		Mode of Presentation		Mode of Delivery		Weight or Dead lbs. ozs.	Alive or Dead
	M.	F.	Head	Lower Extremity				M.	F.	Head	Lower Extremity				
1	L.	—	Head	—	Naturally	4 12	Lived	—	L.	—	Knee	Extracted	4 7	Lived	Recovered
2	L.	—	H.	—	"	5 0	"	—	L.	—	Breech	"	5 12	"	"
3	—	L.	H.	—	"	5 12	"	L.	—	—	Breech	"	6 2	"	"
4	L.	—	—	Breech	Extracted	5 12	"	—	L.	Hand & head	—	Naturally	5 8	"	"
5	—	L.	—	Breech	"	6 3	"	L.	—	Head	—	"	6 8	"	"
6	—	L.	Head	—	Naturally	5 10	"	L.	—	—	Foot	Extracted	7 12	"	"
7	—	L.	—	Foot	Extracted	5 0	"	L.	—	—	Arm	Version	6 4	Died in 6 hours	"
8	L.	—	Head	—	Naturally	5 0	"	—	L.	—	Breech	Extracted	4 0	Lived	"
	4	4	5	3		43 1	8	4	4	2	1 Up. Ex 5 Lr. do.		46 3	7 Lvd. All recovered 1 Died	

TABLE 6.—TWINS.—Of the 8 cases where the children were of the same sex, in 4 instances they were male, and in 4 female, and were born as follows :—

No.	No of Pregnancy	Sex of Children		Weight lbs. ozs.	Mode of Presentation		Mode of Delivery	Result to Child		Result to Mother
		M.	F.		Head	Upper or Lower Extremity		M.	F.	
1	10th	2	—	4 6	Head	—	Natural	Lived	Lived	Recovered
2	5th	—	2	4 11	—	Shoulder	Version	"	"	"
3	3rd	—	2	5 11	Head	—	Natural	"	"	"
4	4th	2	—	5 1	—	Breech	Assisted	"	"	"
5	2nd	2	—	8 12	Head	—	Natural	"	"	"
6	2nd	—	2	4 0	—	Breech	Assisted	"	"	"
7	4th	2	—	6 0	Head	—	Natural	"	"	"
8	12th	—	2	4 0	—	Arm	Assisted	"	"	"
				5 4	—	—	Version	"	"	"
				3 14	Head	—	Forceps	"	"	"
				3 14	Head	—	Version	"	"	"
				5 4	Head	—	Natural	"	"	"
				5 8	—	Foot	Assisted	"	"	"
				6 6	Head	—	Natural	"	"	"
				7 0	—	Foot	Assisted	"	"	"
				5 4	Head	—	Natural	"	"	"
				5 10	Head	—	Do.	"	"	"
		4	4	M. 41 7 F. 40 2	• 10	Upper extremity 2 Lower " 4	8 Natural 3 Version 4 Assisted 1 Forceps	8 lived	8 lived	All Recovered

Of the 35 pluriparæ, 15 were male children, 3 were dead at birth, 1 was the 1st and 1 the 2nd of twins, 1 was putrid; 20 were females, 1 of which was putrid. Of the 15 male children, 11 presented with the breech, 1 being the 1st and 1 the 2nd of twins; 4 presented with the foot, 2 the 2nd of twins. Of the 20 female children, 11 were breech presentations, 2 being the first and 2 the 2nd of twins; 2 were knee presentations, 1 the 2nd of twins; 7 were footlings, 1 the 1st and 2 the 2nd of twins. All the mothers recovered.

FORCEPS.

In 138 instances we deemed it advisable to employ the forceps in order to effect delivery, as well for the safety of the mother as to preserve the life of the child. Table No. 8 will show that of the 138 cases 105 were primiparæ, who were delivered of 59 male children, and 46 female, 3 of the males being dead at birth; 97 lived, and 5 died.

Of the 3 males which were dead at birth, the 1st was a case of early rupture of the membranes (17 hours), together with narrowing of the antero-posterior diameter of the brim, where the head became arrested, parietal bones overlapping, pains strong; delivery was accomplished with some difficulty, the child could not be resuscitated; weight, 7 lb. 9 oz. Mother was discharged well on the 8th day.

The 2nd, aged 20, had been under the care of a practitioner (we were told) for 2 days before being brought to the hospital. On admission the head was found above the brim; waters escaped; large caput succedaneum formed; olive-coloured discharge; pains strong; os $\frac{3}{4}$ ths dilated. She was put under the influence of chloroform, and delivered after some difficulty. The child presented a great depression on the left frontal and parietal bones, owing to projection of the promontory of the sacrum; it was quite dead when born; weight, 8 lbs. 4 oz. Mother discharged on 8th day.

The 3rd, aged 22; in labour 24 hours before being brought to hospital. On admission the membranes were found ruptured; waters escaped 14 hours; the head was found above the brim; the os $\frac{3}{4}$ ths dilated; caput succedaneum formed. The usual means were adopted, and eventually delivery was accomplished with considerable difficulty. Child could not be resuscitated; weight, 7 lbs. 8 oz; the head was greatly depressed in the transverse diameter. Mother discharged on 8th day.

Of the two male primiparous children which died, 1 was of an enormously obese woman, aged 26, where the delay was in the 1st stage, owing to early rupture of the membranes 99 hours previously; the head was found above the brim; suffering greatly. She was treated in the usual way, which rendered the os, which was $\frac{3}{4}$ ths dilated, capable of expansion; delivery effected with difficulty; the head was in the 2nd position; weight of child, 9 lbs.; it died on the 7th day; mother was discharged well on the 12th day.

TABLE 8.—Number of Cases delivered with the Forceps during the year.

From Nov. 6th, 1874, To	Total No. of Deliveries	No. of Pregnancy		CHILDREN								Result to Mother		CAUSE OF DEATH					Twin Cases	
				Total Born		Dead at Birth		Lived		Died				Apoplexy	Scarlatina	Bronchitis	Sloughing of Vagina and Peritonitis	Peritonitis		
				M.	F.	M.	F.	M.	F.	M.	F.	Record.	Died	Apoplexy	Scarlatina	Bronchitis	Sloughing of Vagina and Peritonitis	Peritonitis	M.	F.
Nov. 30	—	8	—	3	5	—	—	—	—	3	5	—	—	7	1	—	—			
Nov. 30	10	—	2	1	1	—	—	—	—	1	1	—	—	2	—	—	—			
Dec. 31	—	12	—	4	8	—	—	—	—	2	8	—	—	12	—	—	—			
Dec. 31	14	—	2	2	—	—	—	—	—	2	—	—	—	2	—	—	—			
Jan. 31	—	5	—	3	2	—	—	—	—	3	2	—	—	5	—	—	—			
Jan. 31	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Feb. 28	—	13	—	10	3	—	—	10	3	—	—	—	—	13	—	—	—			
Feb. 28	16	—	3	3	—	1	—	1	—	4	1	—	1	3	—	—	—			
March 31	—	10	—	5	5	1	—	4	5	—	—	—	—	8	—	—	—			
March 31	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
April 30	—	5	—	2	3	—	—	2	3	—	—	—	—	4	1	—	—			
April 30	7	—	2	2	—	1	—	1	—	—	—	—	—	2	—	—	—			
May 31	—	7	—	4	3	—	—	4	2	—	—	—	—	7	—	—	—			
May 31	13	—	6	4	2	—	—	2	—	4	2	—	—	6	—	—	—			
June 30	—	7	—	3	4	—	—	3	3	—	—	—	—	6	1	—	—			
June 30	11	—	4	3	1	2	—	1	—	3	3	—	—	4	—	—	—			
July 31	—	14	—	10	4	2	—	8	4	—	—	—	—	14	—	—	—			
July 31	16	—	2	1	1	—	—	1	1	—	—	—	—	2	—	—	—			
August 31	—	7	—	5	2	—	—	5	2	—	—	—	—	7	—	—	—			
August 31	13	—	6	3	3	—	—	3	3	—	—	—	—	6	—	—	—			
Sept. 30	—	11	—	9	2	—	—	9	2	—	—	—	—	11	—	—	—			
Sept. 30	16	—	5	3	2	—	—	3	2	—	—	—	—	5	—	—	—			
Oct. 31	—	5	—	1	4	—	—	1	3	—	—	—	—	5	—	—	—			
Oct. 31	6	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—			
Nov. 5	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Nov. 5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Total	138	105	—	59	46	3	—	54	43	2	3	100	5	1	1	—	1			
Total	—	—	33	22	11	4	8	16	6	2	2	33	—	—	—	—	—			

The 2nd was a case, aged 24, in which the membranes were ruptured for 12 hours; the head descended low in the cavity, where it was arrested from inertia and disproportion; child weighed 8 lbs. 4 oz.; died on the 4th day from cerebral congestion. Mother discharged on the 8th day.

Of the 46 female primiparous children, 43 lived, 1 of which was the 1st of twins, and 3 died, as follows:—

The 1st was in a case, aged 20; tedious in the 1st stage from rigidity, for which the usual treatment was adopted. As soon as the os was $\frac{3}{4}$ ths dilated, the membranes were ruptured, when the head descended to the outlet, where it was arrested from inertia; no advance for 2 hours. She was delivered of a child, weighing 5 lbs. 14 oz., which died on the 5th day from general delicacy. Mother recovered. Went out on the 7th day.

The 2nd was in a case, aged 40, innupta; the delay was in the 2nd stage, which lasted 5 hours; the head was arrested in the cavity, bones becoming greatly overlapped; scalp tumour formed; the child weighed 7 lbs. 6 oz., was lively when born, but got convulsions on the morning of the 2nd day, and died in 5 hours. Mother recovered. Discharged on the 8th day.

The 3rd occurred in a case of acute bronchitis, aged 25; as she was suffering from great dyspnoea, she was delivered when the os was $\frac{3}{4}$ ths dilated; the child weighed 6 lbs. 5 oz., which died on the 3rd day, mother not being able to nurse it. She was at once put under treatment for the chest complaint.

The following morning Dr. H. Kennedy was kind enough to see her with me. She had a pulse 130; tongue dry, brown crust, sordes on teeth, dyspnoea—in fact, all the symptoms of typhus fever. At noon she was again visited, when she was found crying; and on being asked why she was doing so, she stated that she had been seduced—turned out by her parents; she had nowhere to go, and did not know what would become of her; that she had twice attempted suicide, but was prevented. We told her to make her mind easy, that we would befriend her, and get a home for her. From this she began to mend. She was sent to No. 11, chronic ward, on her 10th day, a week after which she took the place of wardmaid, where she continues ever since. This is a remarkable instance of the wonderful influence of the mind over the body.

5 mothers died, 1 of apoplexy, 1 of scarlatina, 1 of bronchitis, 1 of sloughing of the vagina, followed by peritonitis, and 1 of peritonitis.

Of the 33 pluriparae, 22 were delivered of male children. 16 lived (1 of which was the first of twins); 5 were dead-born, and 1 died. 11 female children were delivered; 6 lived, 3 died, and 2 were dead at birth.

Of the 5 male children which were dead at birth :—

The first was a breech presentation, her seventh pregnancy ; there was great difficulty in bringing it through the brim, owing to the projection of the sacral promontory ; and, in order to deliver the head, we had to apply the forceps ; child weighed 7 lbs. 14 ozs. ; all her previous labours were instrumental. Mother recovered ; went out sixth day.

The second was a case of placenta prævia (partial), eighth pregnancy, in the latter part of the sixth, or beginning of the seventh month ; admitted in a very weak state, from loss of blood ; fortunately the os was dilatable, and we were able to deliver her in a short time. Mother recovered ; went out sixth day.

The third had been under the care of a midwife for 2 days. Admitted with prolapse of the funis, which was pulseless ; her tenth pregnancy ; delivered of a boy, weighed 9 lbs. Mother recovered ; went out fifth day.

The fourth, aged 25, her second pregnancy, was also a case of prolapse of funis, which was pulseless on admission ; delivered of a boy, 8 lbs. 11 ozs. Mother recovered ; went out sixth day.

The fifth, aged 33, her sixth pregnancy ; waters had escaped 63 hours ; there was projection of the promontory of the sacrum, which prevented the head entering the brim ; os $\frac{3}{4}$ ths dilated ; pains strong. She was given a dose of ergot, put under chloroform, and delivered of a boy, 8 lbs. 1 oz., which presented a great depression on the left parietal bone. Mother recovered eighth day.

The one which died was in a case where the difficulty arose from deformity—pelvis simpliciter justo minor—aged 27, her fifth pregnancy ; waters had escaped 6 days ; the head was arrested at the brim ; os $\frac{3}{4}$ ths dilated when the forceps were applied ; child, a boy, weighed 5 lbs. 14 ozs. ; died in 17 hours from cerebral congestion. Mother slow in convalescence, but was discharged well on the twenty-second day.

Of the 3 female children which died :—

The first was a case of partial placenta prævia, admitted in the early part of the seventh month of her sixteenth pregnancy, in a state of great exhaustion from loss of blood ; os $\frac{3}{4}$ ths dilated ; head above the brim ; enabled to effect delivery of a child 3 lbs. 6 ozs., very weakly ; died in 17 hours. Mother recovered ; was discharged well on her eighth day.

The second was a footling, with the funis prolapsed, her tenth pregnancy ; had to deliver the head with the forceps ; child weighed 7 lbs. 12 ozs. ; it gasped 4 or 5 times, and the pulsation was maintained for 15 minutes. Mother recovered, and discharged well on the eighth day.

The third was also a case of prolapse of funis. Mother extremely delicate from jaundice, aged 24, her second pregnancy. Version was attempted, but, owing to the waters having escaped early (some 20 hours

previously), causing the uterus to contract so firmly round the child, we did not consider it advisable to persevere, so delivered with the forceps; child weighed 5 lbs. 11 ozs.; was born with sclerema of left side of face, neck, and arm, and extending down the sides; died on the sixth day. In this case there was severe P. P. H., requiring the injection of the solution of the perchloride of iron, strength 1 to 4. Mother recovered; discharged eighteenth day, well.

Of the 2 which were dead at birth:—

The first was in a case, aged 30, her seventh pregnancy; the waters had escaped 20 hours; head remained above the brim in labour 25 hours; os $\frac{3}{4}$ ths dilated; olive-coloured discharge. Child weighed 7 lbs. 12 ozs.; could not be resuscitated. Mother made a good convalescence.

The second, a case, aged 27, her seventh pregnancy; the waters had escaped 17 hours. In this case the head descended into the cavity, where it was arrested; after waiting 2 hours, child—weight, 5 lbs. 4 ozs.—was delivered; found to be hydrocephalic; no pulsation in the cord at birth; she had not felt the child for 2 days. Mother went on well, and was discharged the ninth day.

There were 42 of the foregoing forceps cases where we considered it advisable to interfere, and effect delivery, before the os uteri was fully dilated, 34 being primiparæ, and 8 pluriparæ.

Now, as this deviation from the ordinary rules for the application of the forceps is, I may say, a novelty, at least to most of my readers, many of whom may be sceptical as to the propriety of the practice, and may question its justifiability, I beg leave to repeat, nearly in the same words, what I stated in my last Report:—That having adopted this method now for the last 3 years, during which time we have delivered 113 such cases, we are more and more convinced every day of its great advantage in saving the lives of both mother and child. Of course, it is not without danger in unskilful hands, and should only be attempted by those who have thoroughly acquired that great delicacy of touch so essential in the obstetrician, and who have considerable experience in the use of the instrument; with them, if properly and carefully performed, it is a perfectly safe proceeding. It may be necessary to state that in all such cases as we are speaking of, although the os is only dilated to the extent mentioned, it nevertheless must be *dilatable*. When the os is rigid we adopt the usual means for its relaxation previous to operating. By this practice we not only save the life of the child, but also we prevent much danger to, if not the death of, the mother, from the effects of the long-continued pressure on the soft parts, particularly where the membranes have been ruptured, and the liquor amnii escaped early in the labour, and, I may here say, that in every instance tried I have succeeded. In order that you may see, in a more satisfactory manner, the results of the practice, I refer you to Table No. 9.

TABLE 9.—Cases where the Forceps were used before the Os Uteri was fully Dilated.

No.	Age	No. of Pregnancy		CHILD						Hours in Labor	Cause of Interference					Degree of dilatation of os at time of operation			Amount of advance of the head when the forceps were applied			Result to Mother		Cause of Death	
				Sex		Weight	Lived	Died	Early rupture of membrane		Protrusion of funis	Cervix prol. on by head	Pl. Previa	Two-fifths	Three-fifths	Four-fifths	Above brim	In the brim	In the cavity	Recovered	Died	Pyemia	Peritonitis		
		M.	F.																						
1	27	-	5	L.	-	5 14	-	D.	8	1	-	-	-	-	1	-	-	1	-	1	-	-	-		
2	26	1	-	L.	-	9 0	-	D.	40	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
3	21	1	-	-	-	8 4	L.	-	40	1	-	-	-	-	1	-	-	1	-	1	-	-	-		
4	21	1	-	-	-	6 7	L.	-	24	1	-	-	-	-	-	1	-	-	1	-	-	-	-		
5	21	1	-	L.	-	8 8	L.	-	25	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
6	24	1	-	L.	-	8 14	L.	-	25	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
7	29	1	-	-	-	6 8	L.	-	13	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
8	24	1	-	L.	-	8 13	L.	-	20	1	-	-	-	-	1	-	-	1	-	1	-	-	-		
9	40	-	16	-	-	2 6	-	D.	20	-	-	-	1	1	-	-	1	-	1	-	-	-	-		
10	30	1	-	L.	-	7 6	L.	-	23	1	-	-	-	-	-	1	-	-	1	-	-	-	-		
11	21	1	-	L.	-	5 11	L.	-	46	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
12	20	1	-	D.	-	7 9	-	-	17	1	-	-	-	-	1	-	-	1	-	1	-	-	-		
13	26	1	-	L.	-	9 0	L.	-	24	1	-	-	-	1	-	-	1	-	-	1	-	-	-		
14	21	1	-	L.	-	8 6	L.	-	26	1	-	-	-	1	-	-	1	-	-	1	-	-	-		
15	25	1	-	-	-	5 7	L.	-	20	1	-	-	-	1	-	-	1	-	-	1	-	-	-		
16	21	1	-	L.	-	7 12	L.	-	24	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
17	30	-	7	D.	-	7 12	-	-	25	1	-	-	-	-	-	1	1	-	-	-	-	-	-		
18	20	1	-	L.	-	7 0	L.	-	24	1	-	-	-	-	-	1	-	1	-	1	-	-	-		
19	21	1	-	-	-	7 14	L.	-	30	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
20	28	1	-	L.	-	7 6	L.	-	30	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
21	23	1	-	-	-	10 0	L.	-	30	-	-	-	-	-	1	-	-	1	-	1	-	-	-		
22	22	1	-	L.	-	8 7	L.	-	27	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
23	23	1	-	L.	-	8 10	L.	-	25	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
24	27	1	-	L.	-	5 10	L.	-	19	-	-	-	-	1	-	-	-	1	-	1	-	-	-		
25	22	1	-	D.	-	7 8	-	-	32	1	-	-	-	1	-	-	1	-	-	1	-	-	-		
26	26	1	-	L.	-	6 14	L.	-	38	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
27	23	-	2	L.	-	7 2	L.	-	31	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
28	23	1	-	-	-	5 10	L.	-	23	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
29	29	-	3	L.	-	5 1	L.	-	20	-	-	-	-	-	-	-	1	-	1	-	-	-	-		
30	28	-	2	L.	-	10 0	L.	-	20	-	-	-	-	1	-	-	1	-	1	-	-	-	-		
31	26	1	-	L.	-	7 10	L.	-	30	-	-	-	-	1	-	-	-	1	-	1	-	-	-		
32	17	1	-	L.	-	8 2	L.	-	30	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
33	27	-	5	L.	-	7 4	L.	-	12	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
34	28	1	-	L.	-	7 12	L.	-	30	1	-	-	-	-	1	-	-	1	-	1	-	-	-		
35	23	1	-	L.	-	9 0	L.	-	18	1	-	-	-	-	1	-	-	1	-	1	-	-	-		
36	21	1	-	L.	-	9 6	L.	-	22	1	-	-	-	1	-	-	1	-	1	-	-	-	-		
37	25	1	-	L.	-	7 8	L.	-	20	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
38	24	1	-	-	-	7 12	L.	-	30	1	-	-	-	-	1	-	-	-	1	-	1	-	-		
39	26	1	-	-	-	6 12	L.	-	6	-	-	-	-	1	-	-	1	-	1	-	-	-	-		
40	26	1	-	L.	-	6 5	-	D.	30	-	-	-	-	1	-	-	1	-	1	-	-	-	-		
41	33	-	6	D.	-	8 1	-	-	12	1	-	-	-	-	-	1	-	-	1	-	-	-	-		
42	26	1	-	L.	-	10 4	L.	-	12	1	-	-	-	1	-	-	-	1	-	1	-	-	-		
Prim.	34	-	22	12			30	2		29			-	19	11	4	6	15	13.						
Pluri.	-	8	4	4			4	2		5			1	5	1	-	5	2	1						
							34	4																	

This Table shows the number of cases delivered; the special causes of interference; the amount of expansion of the os uteri at the time we began to operate; the absolute position of the child's head, whether above the brim, in the brim, or in the cavity of the pelvis; and the result to the mother and child."

Thus, in looking over the list, you will perceive that of the 34 primiparæ, 22 had male children: 20 were alive at birth, and 2 were dead, the details of which are mentioned under the head of primiparæ in the general account of the forceps cases, as well as the 1 who died.

12 female children were born alive, 1 of whom died.

Causes of Interference.—The first, and most frequent, was from early rupture of the membranes and the escape of the liquor amnii before the dilatation of the os, thereby allowing the foetal head to press injuriously on the soft parts of the mother. Of this there were 34 instances, 29 in primiparæ, 5 in pluriparæ.

Of the 29 primiparæ, the waters escaped as follows:—

In 1, 7 hours, she was delivered of a boy, still-born; in 3, 12 hours, delivered of 2 males, 1 female, all living; in 4, 14 hours, 3 males, 1 female, 1 of the males died; in 2, 15 hours, 2 males, both living; in 2, 18 hours, 1 male, 1 female, both living; in 2, 19 hours, 1 male, 1 female, both living; in 3, 20 hours, 2 males, 1 female, 1 of the males dead; in 2, 21 hours, 2 females, both living; in 1, 22 hours, male, dead; in 1, 24 hours, male, lived; in 2, 26 hours, males, both lived; in 1, 27 hours, male, lived; in 1, 29 hours, female, lived; in 2, 30 hours, 1 male, 1 female, both living; in 1, 40 hours, male, living; in 1, 99 hours, male, living.

Of the 5 pluriparæ, the waters escaped as follows:—

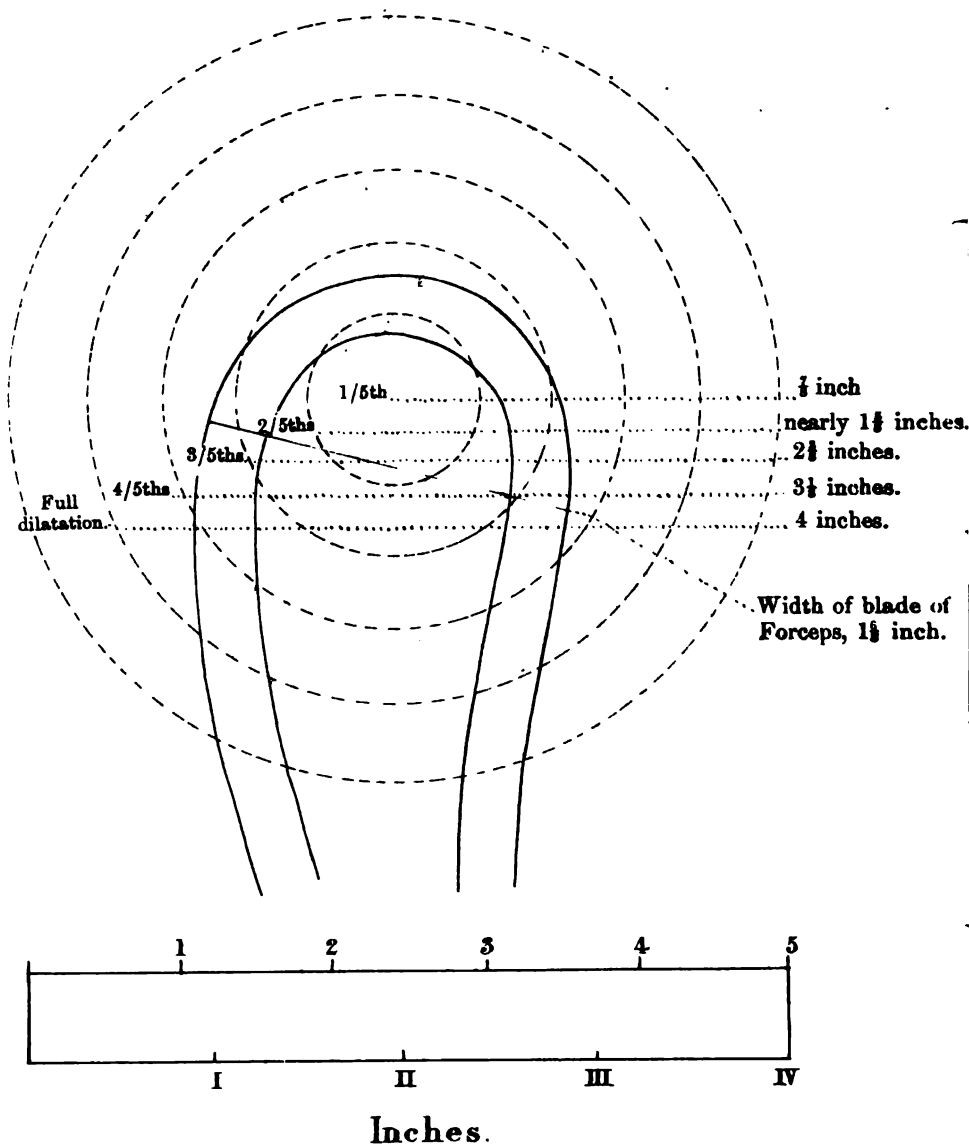
In 1, 12 hours, male, living; in 1, 13 hours, male, living; in 1, 20 hours, female, dead; in 1, 63 hours, male, living; in 1, 6 days, male, died.

Thus will be seen that of the primiparæ 23 boys were born, 3 of which were dead at birth, and 1 died; in this case the waters had escaped 99 hours. And of the pluriparæ, 4 boys were born, 1 of which died, where the waters had escaped 6 days.

Secondly, in cases where, although the membranes were entire, the head descended immediately on the cervix, without any bag of waters intervening, and expanding it, thereby pressing as injuriously upon it as if the liquor amnii had escaped. There were 6 instances of this class; 4 in primiparæ, giving birth to 2 boys and 2 girls; and 2 pluriparæ, having 2 girls. All the children lived.

Thirdly, the cause of interference in 1 case was the prolapse of the funis, a primipara; she was delivered of a girl, which lived.

Fourthly, a case of partial placenta prævia in the sixth month; she was delivered of a girl, which lived for 17 hours; weight, 2 lbs. 6 ozs.



DEGREES OF DILATATION OF THE OS UTERI.

Degree of Dilatation of the Os Uteri at the time of Operation.—In calculating the amount of expansion, as I mentioned in my last Report, 4 inches is assumed to be the full dilatation the os uteri undergoes before the foetal head can clear it. This, as you will perceive by the diagram, is divided into 5 parts, $\frac{1}{5}$ th being about $\frac{1}{16}$ of an inch; $\frac{2}{5}$ ths being $1\frac{1}{8}$ inches; $\frac{3}{5}$ ths, $1\frac{1}{2}$ inches; and $\frac{4}{5}$ ths, $3\frac{1}{16}$ inches.

In 24 instances the delivery was effected when the os was only $\frac{3}{5}$ ths dilated, 19 being in primiparæ, and 5 pluriparæ. 18 of the primiparous children lived. 1 was dead-born, a male. The mother, aged 21, in labour 24 hours before admission; the waters had escaped 14 hours. On examination the head was found above the brim, a caput succedaneum formed, owing to projection of the promontory of the sacrum; she was put under chloroform, and delivery effected after considerable difficulty; child, a male, weighed 7 lbs. 8 ozs.; its head was deeply depressed in the transverse diameter, owing to the deformity; it could not be resuscitated. The mother made a good recovery.

2 mothers died. First, aged 21, admitted in a state of great delicacy, owing to a cold caught a fortnight before; the delay was owing to the waters having escaped 26 hours; the head was found above the brim, caput succedaneum formed, parts hot. She was put under chloroform, and delivery effected with difficulty of a boy, which weighed 8 lbs. 6 ozs., lived; the placenta was expelled in 5 minutes; no P. P. H. Diarrhœa set in the day after, sloughing of the vagina and perinæum followed, and she sank on the sixth day.

The second, aged 28, admitted fretting. The membranes had ruptured, and the waters had escaped 20 hours before; the head was arrested in the brim. The usual means to relax the os were had recourse to. She was put under chloroform, and delivered of a girl, which lived; weight, 7 lbs. 6 ozs.; placenta was expelled in 8 minutes; no P. P. H. She appeared to be labouring under some distress of mind, although she went on well till the sixth day, when peritoneal symptoms set in, and she died in 3 days after.

Of the 5 pluriparæ, 2 had male children, and lived; 3 had females, 2 of which lived, and 1 died in 17 hours, the case of partial placenta prævia before recorded. All the mothers recovered.

Where the os was $\frac{3}{5}$ ths dilated there were 12 instances, 11 being primiparæ, and 1 pluripara. Of the 11 primiparous children, 10 lived, and 1 was dead at birth; all the mothers recovered. The child of the pluripara, was a male, alive at birth, weighed 5 lbs. 6 ozs., but died in 5 hours. In this case the waters had escaped 6 days. Mother recovered.

There were 5 instances where the os was $\frac{4}{5}$ ths dilated, 4 of which were primiparæ; all the children lived, and mothers recovered. 1 pluripara, her seventh child, a female, dead at birth; weight, 7 lbs. 12 ozs. The waters in this case had escaped 20 hours. Mother recovered.

Position of the Head at the Time of Operation.—The head was above the brim in 11 instances—6 primiparæ, 5 pluriparæ. Of the 6 primiparæ, 4 were delivered of male children, 2 of which lived, 1 died, 1 was dead at birth; 2, of female children, both of which lived; 1 mother died. Of the 5 pluriparæ, 2 were delivered of male children, 1 lived, and 1 was dead at birth; 3 were delivered of female children, 1 lived, 1 died, and 1 was dead at birth. The mothers recovered.

In 17 instances the head was in the brim, 15 being primiparæ, and 2 pluriparæ. Of the 15 primiparæ, 9 were delivered of male children, 8 lived and 1 died; 6, of female children, all lived; 1 mother died. Of the 2 pluriparæ, 1 was delivered of a male child, which died; 1, of a female child, lived. Mothers recovered.

In 14 instances the head was in the cavity, 13 being primiparæ and 1 pluripara. Of the 13 primiparæ, 9 were delivered of male children, all of which lived; 4, female children, all lived. 1 pluripara, male child, lived; mothers recovered.

CRANIOTOMY.

Craniotomy had not to be performed once since the 2nd of September, 1873, a period of 15 months, during which time 1,429 cases were delivered.

This we attribute to the greater efficiency of the double-curved forceps over those with the straight blades, which, at the suggestion of my friend and then assistant, Dr. J. J. Cranny, I was induced to adopt, now upwards of three years since, there having been many cases where the head was arrested in the brim, and even above it, with narrowing of the conjugate diameter, which, without the aid of the double curve, we should have been obliged to perforate.

VERSION.

Version had to be performed 14 times, all in primiparous cases, in consequence of—4 being upper extremity presentations, 2 of which were the second of twins, 2 were single cases, all the mothers recovered; 4 being cases of placenta prævia, 3 complete, 1 mother died of hæmorrhage with laceration of vagina and cervix, 1 partial; 2 were cases of accidental hæmorrhage; 3 were the second of twins, head presentations; 1 a case of prolapse of the funis. 10 were delivered under chloroform. All the mothers, with the one exception, recovered.

ACCIDENTAL HÆMORRHAGE.

There were 7 cases of accidental hæmorrhage. 1 primipara, a case of internal hæmorrhage at full time; child, a girl, dead; mother recovered. 6 pluriparæ—2 gave birth to male children, 1 of whom lived; and 4 female, 2 of which were dead at birth. 1 mother died of typhoid fever.

PLACENTA PRÆVIA.

Placenta prævia occurred in 5 instances, all pluriparæ. 3 male children were delivered, 2 of which lived, 1 died; 1 mother died of hæmorrhage. 2 female children were delivered, 1 of which lived, 1 died; mothers recovered. 3 were cases of complete, and 2 of partial, prævia. 4 were delivered by version, and 1 by forceps, a case of partial placenta prævia.

POST-PARTUM HÆMORRHAGE.

As various opinions exist amongst obstetricians with regard to what may be actually called *post-partum* hæmorrhage, I conceive that there ought to be, if possible, an accurate definition laid down as to what constitutes the complication.

Whether it should comprise every slight dash of blood or trickling, requiring merely steady pressure on the uterus, and the application of cold water externally, the pulse not being affected.

Or whether the amount of loss may be such as, in the opinion of the attendant, it may be considered necessary to inject cold water into the vagina or uterus, with the administration of ergot, wine, and perhaps an opiate, where still the pulse is but little affected.

Or, lastly, should it be confined to cases where the flow is so great and the draining continues till the pulse becomes affected, there is fainting, and all the symptoms of great exhaustion, rendering it necessary to adopt some more powerful measures, such as strong astringents, stimulants, &c.

In order, therefore, to give a distinct idea of the hæmorrhages that occurred after labour during the past year, I give the following classification:—

Degree of hæmorrhage, requiring the administration of ergot and the application of cold water—1st. By napkins to the vulva and sacrum; 2nd. By its injection into the vagina; or, 3rd. Requiring the injection of the solution of perchloride of iron into the uterus.

And by referring to Table No. 10, you will perceive that of the 27 cases tabulated, 9 occurred in primiparæ and 18 in pluriparæ. All were delivered by the natural efforts, with the exception of 4, 3 primiparæ and 1 pluripara, where the forceps had to be employed.

In the 14 cases which came under the 1st class of hæmorrhage, 3 were in primiparæ and 11 in pluriparæ; all were delivered by the natural efforts but 1, a primipara, who had to be delivered with the forceps. In this case it arose from mal-application of the binder, allowing clots to form; when they were pressed off, the hæmorrhage ceased, and the binder being re-adjusted, it did not recur.

TABLE 10.—*Post-Partum Hemorrhage.*

Age	No. of Pregnancy		Sex of Child		Mode of Delivery		Chloroform used	Duration of		Degree of Hemorrhage requiring			Result to Mother
	1st	Subst.	M.	F.	Natural	Forceps		2nd Stage Hours	3rd Stage Minutes	1st Ergot Cold by Napkin	2nd Cold by Injection	3rd Solution of Perchloride of Iron	
18	1	—	—	L.	Natural	Forceps	Ch.	3	10	E. C.	—	—	Recovered
23	—	2	L.	—	"	—	—	1	2	E. C.	—	—	"
22	—	2	L.	—	"	—	—	1	3	E. C.	—	—	"
26	—	3	L.	—	"	—	—	1	3	E. C.	—	—	"
25	—	2	—	L.	"	—	—	1	15	E. C.	—	—	"
19	1	—	—	L.	"	—	—	1	15	E. C.	E. C. I.	—	"
22	—	3	L.	—	"	—	—	4	5	E. C.	—	—	"
20	1	—	L.	—	"	—	—	4	10	E. C.	E. C. I.	—	"
27	—	3	L.	—	"	—	—	1	4	E. C.	—	—	"
19	1	—	L.	—	"	—	—	1	6	E. C.	—	—	"
23	—	3	L.	—	"	—	—	1	7	E. C.	E. C. I.	—	"
26	—	3	L.	—	"	—	—	1	7	E. C.	E. C. I.	—	"
35	—	7	L.	—	"	—	—	1	12	E. C.	—	—	"
33	—	3	L.	—	"	—	—	1	5	E. C.	—	—	"
30	—	4	L.	—	"	—	—	1	5	E. C.	—	—	"
21	1	—	—	L.	"	—	—	1	5	E. C.	—	—	"
29	—	4	L.	—	"	Forceps	—	4	7	E. C.	E. C. I.	—	"
32	1	—	L.	—	Natural	—	—	1	14	—	—	—	"
36	—	9	L.	—	"	—	—	1	10	—	—	—	"
39	—	4	L.	—	"	Forceps	—	—	5	E. C. I.	E. C. I.	E. S. P. F.	"
28	1	—	L.	—	Natural	—	Ch.	3	5	—	E. C. I.	—	"
22	1	—	L.	—	Natural	Forceps	Ch.	—	9	—	—	E. S. P. F.	"
24	—	2	L.	—	Natural	—	Ch.	2	4	E. C.	—	—	"
26	—	3	L.	—	"	—	—	2	22	—	E. C. I.	—	"
23	—	3	L.	—	"	—	—	2	3	—	E. C. I.	—	"
33	—	8	L.	—	"	—	—	1	3	—	E. C. I.	—	"
21	1	—	L.	—	"	—	—	1	7	—	—	E. S. P. F.	"
9	9	18	14	13	23	4	3	—	—	14	10	3	—

Notz.—L. Living; Ch. Chloroform; E. C. Ergot and cold application externally; E. C. I. Ergot and cold water by injection into the vagina; E. S. P. F. Ergot and injection of the solution of perchloride of iron.

In the 10 cases where the injection of cold water into the vagina was found necessary, 4 were primiparæ, 1 of which had to be delivered with the forceps; 6 were pluriparæ, all of which were delivered naturally.

In the 3 cases requiring the injection of the solution of the perchloride of iron into the uterus, 2 were primiparæ; 1 was delivered naturally, the strength of the solution used in this case was 1 in 8; 1 had to be delivered with the forceps, owing to delicacy of health, the strength of the solution used was 1 in 20. The pluriparous case was admitted labouring under a severe attack of jaundice, and extremely weak; had to deliver her with a forceps; the solution used in this case was 1 in 4. All the mothers recovered.

Duration of the Second Stage of Labour in the above 27 Cases.

In 2 delivery was commenced before the os was fully dilated.

„ 1 the second stage lasted 5 minutes.

„ 4	„	„	15	„
„ 4	„	„	30	„
„ 1	„	„	45	„
„ 3	„	„	60	„
„ 3	„	„	1½	hours.
„ 3	„	„	1½	„
„ 2	„	„	1¾	„
„ 2	„	„	2	„
„ 2	„	„	3	„
„ 1	„	„	4	„
„ 1	„	„	4¾	„

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27

Duration of the Third Stage of Labour.

In 2 instances the placenta was expelled in 2 minutes.

„ 4	„	„	3	„
„ 2	„	„	4	„
„ 4	„	„	5	„
„ 1	„	„	6	„
„ 4	„	„	7	„
„ 1	„	„	9	„
„ 4	„	„	10	„
„ 1	„	„	12	„
„ 1	„	„	14	„
„ 2	„	„	15	„
„ 1	„	„	22	„

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27

All the mothers recovered, 6 insisting on being allowed out on the sixth day; 5, on the seventh day; 8 were allowed to leave on the eighth day; 5, on the ninth day; 1 remained till the tenth day; the case of jaundice till the eleventh day; 1, till the nineteenth day, an epileptic. Thus showing there was none of a serious character.

While on the subject of *post-partum* hæmorrhage—particularly as the question of the tendency that “a short second stage” favours the occurrence of *post-partum* hæmorrhage has been, and still is, under discussion—Table No. 11 has been drawn out in order to show, so far as our records can supply, the different periods the second stage occupied up to 1 hour, and the number of cases of hæmorrhage that occurred in each period.

Thus, in the 1st period, where there was no 2nd stage; or, rather, it did not occupy more time than during the absolute passage of the child.

In this there were 45 cases, with 2 of P. P. H., requiring the injection of the solution of perchlorid. ferri, strength 1 in 20 and 1 in 4; the latter was the case of jaundice.

In the 2nd period, where the 2nd stage lasted 5 minutes, there were 24 cases, and in 1 P. P. H. occurred, of the 2nd degree.

In the 3rd period, where the 2nd stage lasted 10 minutes, there were 35 cases, and hæmorrhage occurred in 1 instance of the 2nd degree.

In the 4th period, where the 2nd stage lasted 15 minutes, there were 71 cases, out of which there were 4 cases of hæmorrhage—1 of the 1st degree, 3 of the 2nd.

In the 5th period, where the 2nd stage lasted 20 minutes, there were 56 cases, and no P. P. H.

In the 6th period, the 2nd stage lasting 30 minutes, there were 207 cases, and 4 cases of P. P. H., all of the 1st degree.

In the 7th period, the 2nd stage lasting 45 minutes, there were 115 cases and 1 P. P. H., of the 1st degree.

In the 8th period, the 2nd stage lasting 60 minutes, there were 131 cases and 1 P. P. H. of the 1st degree.

Thus, of 684 cases where the 2nd stage did not exceed one hour, there were 14 cases of *post-partum* hæmorrhage—viz., 7 of the 1st degree, merely requiring the cold water by napkin and steady pressure; 5 of the 2nd degree, where the cold, in addition, was applied by injection into the vagina; 2 of the 3rd degree, requiring the injection into the uterus of the solution of perchloride of iron.

TABLE 11.—*Number of Cases where the second stage of Labour did not exceed one hour (not including Cases of Accidental or Unavoidable Hæmorrhage or Convulsions), and the Number of Cases of Post-partum Hæmorrhage which occurred in them.*

				DURATION OF SECOND STAGE.							
				Minutes							
				0	5	10	15	20	30	45	60
Nov.	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	—	—	—
	{ No. of Cases, - - -	-	-	1	2	1	4	1	20	5	8
Dec.	{ Hæmorrhage, - - -	-	-	—	—	—	1	—	—	—	—
	{ No. of Cases, - - -	-	-	3	1	4	6	4	17	7	7
Jan.	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	1	—	1
	{ No. of Cases, - - -	-	-	2	2	5	6	3	18	4	16
Feb.	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	1	1	—
	{ No. of Cases, - - -	-	-	3	3	4	1	6	22	12	13
March	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	1	—	—
	{ No. of Cases, - - -	-	-	5	—	3	3	3	16	13	8
April	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	—	—	—
	{ No. of Cases, - - -	-	-	2	3	2	4	4	19	15	16
May	{ Hæmorrhage, - - -	-	-	—	—	—	1	—	—	—	—
	{ No. of Cases, - - -	-	-	2	2	2	10	8	16	7	8
June	{ Hæmorrhage, - - -	-	-	—	—	—	1	—	—	—	—
	{ No. of Cases, - - -	-	-	5	2	—	6	7	27	7	10
July	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	1	—	—
	{ No. of Cases, - - -	-	-	5	2	3	9	6	22	15	12
Aug.	{ Hæmorrhage, - - -	-	-	—	1	1	—	—	—	—	—
	{ No. of Cases, - - -	-	-	4	5	3	5	4	14	11	7
Sept.	{ Hæmorrhage, - - -	-	-	2	—	—	—	—	—	—	—
	{ No. of Cases, - - -	-	-	7	1	4	8	6	14	6	12
Oct.	{ Hæmorrhage, - - -	-	-	—	—	—	1	—	—	—	—
	{ No. of Cases, - - -	-	-	5	1	4	9	3	6	10	10
Nov.	{ Hæmorrhage, - - -	-	-	—	—	—	—	—	—	—	—
	{ No. of Cases, - - -	-	-	1	—	—	—	1	1	3	4
Total	{ Hæmorrhage, - - -	-	-	2	1	1	4	—	4	1	1
	{ No. of Cases, - - -	-	-	45	24	35	71	56	207	115	131

By observing strictly this practice you not alone avoid the complication, but you favour the completion of the third stage (as Table No. 12 will show) in a very short space of time. Thus, it will be perceived that of 1,191 patients delivered, in 14 the placenta was expelled at same

time with the child; in 542, in 5 minutes; in 399, in 10 minutes; in 131, in 15 minutes; in 55, in 20 minutes; in 17, in 25 minutes; in 15, in 30 minutes; in 9, in 45 minutes, 1 twins, 2 morbid adhesions, 6 inertia; in 5, in 45 minutes, 2 irregular contractions, 3 inertia; in 1, in 50 minutes, allowed to remain by pupil on duty; in 1, in 55 minutes, allowed to remain by pupil on duty; in 1, in 60 minutes, allowed to remain by pupil on duty; in 1, in 65 minutes, child born in a hall in Jervis-street an hour before admission.

TABLE 12.

		DURATION OF THIRD STAGE.											
		Minutes											
		Stiml.	5	10	15	20	25	30	35	45	50	60	65
Nov.	{ Hæmorrhage, No. of Cases,	—	—	—	—	—	—	—	—	—	—	—	—
		—	46	30	6	1	—	1	2	—	—	—	—
Dec.	{ Hæmorrhage, No. of Cases,	—	1	1	—	—	—	—	—	—	—	—	—
		3	50	28	6	2	1	4	1	2	—	—	—
Jan.	{ Hæmorrhage, No. of Cases,	—	1	1	—	—	—	—	—	—	—	—	—
		—	34	30	11	5	—	1	—	1	—	—	—
Feb.	{ Hæmorrhage, No. of Cases,	—	1	—	2	—	—	—	—	—	—	—	—
		1	38	30	17	5	2	1	1	1	—	—	1
Mar.	{ Hæmorrhage, No. of Cases,	—	1	2	—	—	—	—	—	—	—	—	—
		2	56	21	9	3	1	2	—	—	—	1	—
April	{ Hæmorrhage, No. of Cases,	—	—	—	—	—	—	—	—	—	—	—	—
		—	75	25	5	6	1	—	1	—	—	—	—
May	{ Hæmorrhage, No. of Cases,	—	—	1	—	—	—	—	—	—	—	—	—
		—	37	42	12	9	—	3	2	1	—	—	—
June	{ Hæmorrhage, No. of Cases,	—	1	1	—	—	—	—	—	—	—	—	—
		2	32	37	11	5	5	—	1	—	—	—	—
July	{ Hæmorrhage, No. of Cases,	—	2	1	1	—	—	—	—	—	—	—	—
		1	52	43	17	5	1	—	—	—	1	—	—
Aug.	{ Hæmorrhage, No. of Cases,	—	—	2	1	—	—	—	—	—	—	—	—
		3	45	33	12	4	2	2	—	—	—	—	—
Sept.	{ Hæmorrhage, No. of Cases,	—	2	—	1	—	1	—	—	—	—	—	—
		2	50	38	12	5	2	1	1	—	1	—	—
Oct.	{ Hæmorrhage, No. of Cases,	—	2	1	—	—	—	—	—	—	—	—	—
		—	31	36	9	4	2	—	—	—	—	—	—
Nov.	{ Hæmorrhage, No. of Cases,	—	—	—	—	—	—	—	—	—	—	—	—
		—	6	6	4	1	—	—	—	—	—	—	—
Total	{ Hæmorrhage, No. of Cases,	—	11	10	5	—	1	—	—	—	—	—	—
		14	542	399	131	55	17	15	9	5	2	1	1

Thus, in 1,086 the 3rd stage was completed within 15 minutes; and it will be seen that it was completed within half-an-hour in all, with the exception of 18.

PLACENTA RETAINED.

In 11 instances the placenta was retained; in 2 from morbid adhesions; 1 her 2nd, 1 her 11th pregnancy. 2 from irregular contraction—1 a primipara and 1 her 7th pregnancy; and 7 from inertia—2 primiparæ and 5 pluriparæ.

In the case of morbid adhesions, the placenta in both instances was removed in 35 minutes. In the 2 cases of irregular contraction, the placenta was removed—1 in 20 minutes, and the 2nd in 45 minutes. In the 7 cases of inertia, 4 were pressed off in 35 minutes, and 3 in 45 minutes. All the mothers recovered.

We cannot help thinking that irregular contraction of the uterus, in the majority of instances, arises from the person in attendance not following strictly the rules laid down of placing the hand over the fundus uteri at the time the head is passing through the vulva, and never removing it till the placenta is expelled and the binder adjusted. We impress on our pupils never to hurry the removal of the after-birth; but, simply by steady pressure in the axis of the brim, it will be expelled, in the great majority of instances, within 15 minutes, besides which it diminishes the liability to P. P. H.

PROLAPSE OF THE FUNIS.

Prolapse of the funis occurred in 12 instances during the year, 4 being in primiparæ and 8 in pluriparæ—viz., 4 the 2nd pregnancy, 1 the 4th, 1 the 9th, and 2 in their 10th pregnancy.

State and Condition on Admission.—1, a primipara, admitted with the funis protruding through the vulva; a foot was found presenting in the vagina; water had escaped 23 hours; the os rigid, $\frac{1}{2}$ th dilated; was given a warm bath, and delivery effected as soon as possible; child, a girl, was found putrid.

2, also primipara; funis prolapsed; head low in the cavity; was delivered of a boy, which lived.

3rd, a primipara, admitted with the funis prolapsed; cold and pulseless; child was expelled by the natural efforts; a girl, dead.

4th, a primipara, admitted with the funis prolapsed, hardly pulsating; os $\frac{3}{4}$ th dilated; head above the brim; was delivered with the forceps of a girl, which lived.

Pluriparæ—1, her 2nd pregnancy, admitted with accidental hæmorrhage; os fully dilated; the membranes were ruptured; when the funis became prolapsed, version under chloroform was at once performed; a child, a boy, delivered, which lived.

2, her 2nd pregnancy; as soon as the membranes ruptured, the funis came down with the flow of the liquor amnii. Chloroform was at once given, and a girl, which lived, delivered by version.

3, her 2nd pregnancy, the funis was cold and pulseless on admission; 20 hours in labour; was delivered with the forceps of a boy, dead.

4, her 2nd pregnancy, admitted in a very weak and delicate state of health, suffering from jaundice; she was delivered with the forceps of a girl, living, but with sclerema, of which it died on the 6th day.

5, her 4th pregnancy, admitted with the funis prolapsed and pulseless; child born by the natural efforts; a boy, dead; had been 17 hours in labour.

6, her 9th, admitted with the funis prolapsed; footling presentation; delivered of a girl, which lived.

7, her 10th, also a footling; obliged to deliver the head with the forceps; it was a girl; weight, 7 lbs. 12 oz., and alive, but died in 15 minutes.

8, her 10th; had been under the care of a woman for 2 days before being brought to hospital; admitted with the funis pulseless; delivered with the forceps of a boy, dead, weighing 9 lbs.

5 of the above cases were admitted with the funis pulseless; 3 male and 2 female—1 of which was putrid.

3 male children lived, and 2 females; 3 boys and 1 girl were dead at birth; and 2 girls died.

Mode of Delivery.—In 2 instances version was performed; both children saved; in 6 the forceps was employed—2 of the children were saved; in 2, footlings were extracted—1 child saved; and 2 were left to the natural efforts, the funis being prolapsed for some hours, and perfectly pulseless and cold on admission. Reduction of the prolapse was attempted in 3 instances, but not finding it satisfactory, proceeded to deliver at once. All the mothers recovered.

CONVULSIONS.

We had 5 cases of eclampsia during the year—3 in primiparæ, 1 her 2nd pregnancy, and 1 her 3rd.

1, a primipara, aged 18, *seduced*, attacked 12 hours before admission, during which time she had 7 fits. On examination the os was found barely $\frac{1}{2}$ th dilated. The usual treatment was adopted. The os gradually dilated, when a breech was found presenting. The fits recurring every half to three-quarters of an hour, she was kept under chloroform; and when the os was sufficiently dilated, the child, a boy, was extracted by half breech; a 2nd breech was now found and extracted, also a boy, both of which lived. During the labour, which lasted 6 hours, she had 5 fits; some P. P. H. requiring the injection of cold water into the vagina. Consciousness did not completely return till the 3rd day, when she began to fret extremely. Peritoneal symptoms set in at once, became maniacal on the 6th day, and died on the 8th.

2nd, also primipara, and *seduced*, aged 35; seized with fits, for which she was treated in the usual manner. When the os was fully dilated, the head being in the cavity, she was put under chloroform and delivered with the forceps of a boy, which lived; some P. P. H. 1st degree; no return of fits; went out well 19th.

3rd, a primipara, aged 28; face presentation, expelled by the natural efforts after a labour of 6 hours, $1\frac{1}{2}$ of which was in the 2nd stage; child, a girl, 7 lbs. 8 ozs., lived; 3rd stage 17 minutes; no P. P. H.; 3 hours after she was attacked with a fit, when she was treated in the usual manner; urine was found albuminous, though there was no oedema of either upper or lower extremities; there was no return of the eclampsy, and she made a good recovery, and discharged on the 8th day.

4th, her 2nd pregnancy, aged 22; some P. P. H. 2nd degree, after a natural labour of 7 hours; 2nd stage 20 minutes; 3rd 10 minutes; 15 hours after, seized with eclampsy; was treated in the usual way; had 4 fits in less than 3 hours, but eventually made a good recovery; went out 6th day.

5th, her 3rd pregnancy; natural labour 6 hours; no P. P. H.; 9 hours after, seized with a fit of eclampsy; treated as usual; no return; went on well, and went out on 5th day.

EPILEPSY—2 CASES.

C. T., aged 36, 12th pregnancy; subject to epilepsy; labour natural—2 hours; 2nd stage quarter hour; 3rd 12 minutes; no P. P. H.; had a fit 6 hours after delivery; no recurrence; went out well on the 8th day.

E. M., aged 30, 4th pregnancy; epileptic; labour natural—46 hours; 5 minutes in the 2nd stage, 15 in the 3rd; no P. P. H.; got a fit on the 2nd day; went out of her own accord well on the 6th day.

▲APOPLEXY—1 CASE—(Comes under the head of Mania.)

MANIA—5 CASES.

F. R., aged 24, 1st pregnancy; had to be delivered with the forceps, in consequence of narrowing of the pubic arch; went on well till the 4th day, when she was attacked with violent mania (having been disappointed at her mother not coming to see her); had to keep her under chloroform almost continuously for 6 hours before she could be calmed; had a rigor at midnight; under treatment pulse fell from 140 to 92, weak. The following day her eyes were found suffused; pulse 104. On the 2nd day the suffusion of her eyes became more intense; great sickness of stomach; gradually became comatose, and died of apoplexy.

C. D., aged 33, 1st pregnancy; *seduced*; labour difficult, owing to early rupture of the membranes and disproportion; had to be delivered with the forceps; no P. P. H.; she was very silent from the commence-

ment; found great difficulty in getting her to answer questions; became quite maniacal on the 4th day; sent her to the Asylum on the 14th.

M. B., aged 30, 8th pregnancy; labour natural—6 hours' duration; she was of a very fretful, nervous disposition; became maniacal, with pulse quick; skin hot on the 4th day; a red patch appeared soon after on the inside of the right thigh. Phlebitis and phlegmasia, followed by an abscess, which was opened. She, however, convalesced slowly, but eventually went out well on the 21st day.

M. H., aged 30, 1st pregnancy; admitted with œdema of the face, hands, and lower extremities; her labour was slow; had to be delivered under chloroform; on the 5th day she became maniacal; she was treated, with good effect; went out well on the 15th day.

M. M., aged 30, 1st pregnancy; *seduced*; admitted with phlegmasia of both legs, and great tenderness, particularly referred to the calves; in the 7th month her labour was natural; no P. P. H.; was silent from her coming in; became maniacal on the 5th day; jaundice followed, and she died on the 7th day.

Post-mortem examination revealed extensive disease of the liver, heart, kidneys, &c.

RUBEOLA.

Rubeola occurred once in a patient, aged 20, 1st pregnancy; her labour had to be completed with the forceps, in consequence of brow presenting; went on favourably till the 5th day, when measles appeared, with coryza; eyes suffused; cough; pulse 100; the rash continued for 3 days, when it subsided, and she made a good convalescence; no other patient affected.

SCARLATINA.

Scarlatina.—There were 15 cases admitted, 14 of which were in primiparæ. One of these having all the symptoms when admitted, and as she was found not in labour, was sent at once to the Hardwicke Fever Hospital.

In 1 the symptoms showed themselves 1 hour after delivery; on 4th day sent to hospital. In the 2nd, the appearance was on her at her delivery; went on favourably; desquamation took place on the 8th day, and insisted on going out on the 11th day.

In the 3rd, it appeared the day after delivery; she was sent to hospital.

In 8 cases it appeared on the 2nd day; 2 died the day after, and 1 on the 2nd day of the attack; 1 recovered; 4 were sent to Fever Hospital.

In 3 the symptoms developed themselves on the 3rd day; 1 was retained in the hospital—she recovered; 2 were sent to Fever Hospital.

Thus, of the 6 retained in hospital, 3 recovered and 3 died.

Now, in order to show that these cases had no connexion with one another, that they were sporadic, that the disease was latent upon them

on coming in, and that their confinement did not take place at one particular period, but that they occurred at intervals widely apart, and that in no one instance was the disease conveyed to any of the other inmates, I give you the dates upon which they were admitted, the time of their being attacked, and the wards in which they were confined.

The 1st case appeared on Jan. 13, in No. 1 ward, No. 5 bed, where 4 other patients, who were confined in the ward at the same time, all made a good convalescence; she was sent to the hospital on the 4th day. The 2nd that showed itself in No. 1 was in No. 3 bed, on the 9th March—about 2 months afterwards; in the interval the ward was occupied 4 times, and 18 patients delivered, all of whom went out well. 4 other patients delivered at the same time went out well.

The 3rd in No. 1 was in No. 4 bed. On April 22nd, in the interval, there were 3 batches of 4 patients, each confined—i.e., 12 patients—besides 4 others, who were confined at the same time, all of whom, together with the patient seized, recovered.

The 1st that appeared in No. 2 ward was in bed 18, on May 2nd, where 4 others were confined with her in the ward, all of whom, with the patient seized, went on well.

The 2nd was on July 31st, in No. 19 bed. In the interval there were 4 batches of patients, besides the 3 confined with the patient; all went out well.

One occurred in No. 4 ward, No. 39 bed, on May 27th. She was sent to the Hardwicke Fever Hospital.

Three occurred in No. 5 ward—1st on March 14 in No. 46 bed. She, with 4 others who were confined at the same time in the ward, recovered, and went out well.

The 2nd took place in No. 48, June 11th; in the interval—3 months—6 batches of patients were confined in the ward, and at the same time she was confined there were 4 others also in the ward, all of whom went out well. She was sent to hospital.

The 3rd was in No. 47 bed, on October 11th. In the interval—4 months—there were 10 batches of patients confined, all of whom, together with 4 others who were confined at the same time with the one seized, went out well. She was sent to hospital.

Two occurred in No. 6 ward, the 1st on March 28, in No. 67 bed. She was sent to hospital. 3 others, who were confined at the same time, went out well.

The 2nd occurred September 28, 6 months after. She was sent to the hospital. In the interval 15 batches of patients were delivered, all of whom went out well but 1, who, on the 6th April, died of peritonitis; the 3 others confined at the same time went out well.

Two occurred in No. 7 ward, the 1st on February 22nd. Symptoms made their appearance on the 2nd day, and she died the day after in the

hospital. The 4 other patients confined in the ward at the same time went out well.

The 2nd did not take place till September 13, nearly 7 months, during which time there were 18 batches of patients, all of whom went out well, except 1 in the month of June, who died of liver and kidney disease; and the 4 confined in the ward at the same time with the one seized went out well. She was sent to hospital.

One in No. 8 ward, on the 23rd January, seduced. Symptoms showed themselves on the 2nd day, and she died the day after. All the other patients recovered, and there was no other case in the ward during the year.

TYPHOID, TYPHUS.

There was 1 case of typhoid fever, the details of which are mentioned under the head of Death.

And 1 case of typhus, which has also been mentioned.

PERITONITIS.

There were 9 cases of peritonitis, exclusive of those mentioned in the list of deaths—viz., 5 in primiparæ and 4 in pluriparæ. 6 were attacked on the second day; 2 on the third; and 1, a case of accidental hæmorrhage (which ceased on rupturing the membranes), where the symptoms supervened immediately after delivery. All recovered.

PHLEBITIS.

1 patient was attacked with phlebitis after a natural labour, 6 hours' duration, her thirteenth pregnancy, on the sixth day. Under treatment she recovered, and was discharged well on the twentieth day.

That you may be the better able to see that we have had no epidemic in the hospital during the year, notwithstanding the amount of zymotic disease which prevailed outside, I subjoin the Tables similar to those in my previous Reports, giving the number of deliveries which took place in each ward, together with the deaths that occurred in them, and the nature of the complaints, whether zymotic or accidental.

On examining Table No. 13 you will perceive that each ward is placed in numerical order, so that by reading the column downwards—for instance, under No. 1 ward, will be seen the number of patients delivered in each month, and the deaths, if any, and the month in which it took place; also whether of a zymotic type or otherwise. And by looking at the foot of the column may be seen the total number of deliveries, and the deaths which took place in that ward, in the 12 months, and whether of a zymotic type or not. The figures in red note the primiparæ.

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June	Total Deliveries	13	-	11	-	10	-	8	-	9	-	7	-	10	-	18	-	14	-	1	-	95	-	1	-	1
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
July	Primiparae Deliveries	4	-	5	-	6	-	4	-	3	-	1	-	8	-	5	-	3	-	-	-	39	-	1	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
July	Total Deliveries	13	-	14	-	17	-	11	-	13	-	13	-	13	-	14	-	14	-	-	-	122	-	1	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Aug.	Primiparae Deliveries	1	-	1	-	3	-	2	-	6	-	2	-	5	-	3	-	3	-	-	-	25	-	-	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Aug.	Total Deliveries	9	-	8	-	12	-	11	-	13	-	12	-	12	-	13	-	14	-	-	-	104	-	1	-	
	" Deaths	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sep.	Primiparae Deliveries	3	-	4	-	8	-	6	-	2	-	6	-	4	-	4	-	4	-	-	-	41	-	-	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sep.	Total Deliveries	12	-	13	-	15	-	15	-	15	-	13	-	14	-	11	-	10	-	-	-	118	-	1	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-		
Oct.	Primiparae Deliveries	1	-	6	-	3	-	3	-	4	-	2	-	1	-	2	-	-	-	-	-	22	-	-	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Oct.	Total Deliveries	7	-	7	-	14	-	9	-	9	-	8	-	11	-	10	-	8	-	-	-	83	-	-	-	
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Nov.	Primiparae Deliveries	1	-	3	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	-	7	-	-	-		
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Nov.	Total Deliveries	4	-	4	-	2	-	3	-	3	-	-	-	-	-	1	-	-	-	-	17	-	-	-		
	" Deaths	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total Delivered in each Ward		142	-	125	-	162	-	143	-	138	-	127	-	149	-	138	-	112	-	-	-	1236	-	-	-	
Total Deaths in each Ward		-	1	-	3	-	1	-	1	-	1	-	2	-	2	-	3	-	1	-	-	-	15	-	-	
Total Deaths from Zymotic causes in each Ward		-	1	-	3	-	-	-	-	-	-	-	-	1	-	1	-	2	-	-	1	-	-	-	9	
Total No. of Primiparae Delivered in each Ward		40	-	40	-	51	-	45	-	44	-	41	-	40	-	47	-	31	-	-	-	380	-	-	-	
Total Deaths in each Ward		-	1	-	2	-	1	-	1	-	1	-	1	-	2	-	2	-	1	-	-	-	-	12	-	
No. of Deaths from Zymotic causes		-	1	-	2	-	-	-	-	-	-	-	-	1	-	1	-	1	-	-	1	-	-	-	7	

Then, by reading the Table from left to right, you will see the number confined in each ward, and the deaths which occurred in them during each month.

Thus, for example, during the month of November, 14 were confined in No. 1 ward; 13 in 2; 13 in 3; 10 in 4; 9 in 5; 7 in 6, with 1 death, a pluripara (accidental); 11 in 7; 13 in 8, and 1 death, a primipara (accidental); none in 12; making a total of 89 delivered in the month, with 2 deaths, accidental, 33 of which were primiparæ, and 1 death.

And by reading the column under No. 1 ward, from above downwards, you will see that in November 14 were delivered, 7 of whom were primiparæ; 9 in December, 2 primiparæ; 12 in January, 3 primiparæ and so on; till you find at the foot 142 were delivered during the year, and 1 death of a zymotic type occurred. Of these, 40 were primiparæ, in whom the death took place.

As it would be tedious going over the whole list in detail, it will be sufficient to enumerate the wards, with the deaths and the date of occurrence, in order to show that where a zymotic death took place, it did not affect either the patients in the ward, or, I may say, any one in the house.

Thus, beginning with No. 1 ward, we see that the 1 death which occurred was in the month of March, the patient was a primipara, and died of a zymotic disease, scarlatina.

In No. 2 ward there were 3 deaths; 2 in the month of April, in primiparæ, of pyæmia and peritonitis; and 1 in August, a pluripara, a case of accidental hæmorrhage, ending in typhoid fever.

In No. 3 ward there was 1 death in January, a primipara, seduced, a case of convulsions, going on to mania, and terminating with peritonitis.

In No. 4 there was a death in May, a primipara, from sloughing of the vagina; peritonitis supervened.

In No. 5 the only death occurred in April, a primipara, of bronchitis.

In No. 6 there were 2 deaths; 1, her eleventh pregnancy, in November, of placenta prævia, and 1, a primipara, in April, of peritonitis.

In No. 7, 2 deaths occurred, both primiparæ, 1 of scarlatina and 1 of hepatic disease.

In No. 8, 3 deaths took place; 2 primiparæ, 1 in November, of apoplexy, and 1 in January, of scarlatina; and 1, second pregnancy, pluripara, in September, of typhus fever.

In No. 12, 1 death, a primipara, of peritonitis.

And next, as a proof that "a large Maternity is not the centre of zymotic diseases, nor does it engender epidemics," as has been stated, I refer you to Table No. 14, which is arranged, according to the Registrar-General's Reports, into districts—3 on the north side and 4 on the south.

Each district in the Table contains 3 columns; the 1st gives the number of deaths, according to the Report, from zymotic diseases which occurred in the district; the 2nd contains the number of patients delivered in the hospital who came from that district; and the 3rd records the deaths which occurred amongst them, for each month of the year. As it is not necessary to go into the monthly details, I merely give you the summary. In No. 1 district, north city, there were 268 deaths from zymotic causes. 281 were delivered in the hospital who came from that district, out of which 3 died.

In No. 2 district, north city, 190 deaths occurred from zymotic causes. 324 were delivered who came from that district, out of which there was 1 death.

In No. 3 north city district 299 deaths occurred from zymotic diseases. 153 were delivered in the hospital who came from that district, and 3 died.

In No. 1 south city district 309 deaths took place. 45 coming from that district were delivered in the hospital, none of which died.

In No. 2 south city district there were 138 deaths. 142 coming from that locality were delivered in the hospital, out of which there was 1 death.

In No. 3 south city district there were 318 deaths. 101 were delivered in the hospital coming from the district; all went out well.

In No. 4 south city district 368 deaths occurred. There were 190 cases delivered in the hospital who came from that district, out of which there was 1 death.

Thus showing, that of 758 deliveries which took place in the hospital of those coming from the 3 districts on the north side, there were 7 deaths, while the deaths in the districts amounted to 757.

And of the 478 deliveries of those coming from the south side, there were 2 deaths, while the deaths that took place in the district amounted to 1,233.

The PRESIDENT.—Gentlemen, you have heard this valuable and important report—the sixth which Dr. Johnston has presented to us. It proves his proposition, that in a properly managed lying-in hospital—in an hospital where that attention and supervision are given that he gives to the hospital under his charge—the deaths from puerperal causes may be reduced to a minimum as low as that which exists outside its walls. It appears that in over 1,200 patients there were only seven deaths from puerperal causes (for we must distinguish deaths from puerperal causes from those occurring during the puerperal period), that is to say, a mortality about a half per cent. I do not think a more favourable report could be given by any practitioner in the kingdom, either in private or hospital practice. Dr. Johnston's success proves the judiciousness of his practice. At the same time, I think there are certain points in his practice that ought to be discussed; prominent among these is the

frequent use of the forceps. He has been so successful, however, that we are hardly prepared to condemn a practice in which the forceps is used once in every ten cases. Then, again, we find that he uses the forceps in a very large proportion of cases before the os is dilated, and, while the result is very favourable, I should be sorry to see that such a practice should be imitated by young and unskilled practitioners. A practice which may be quite safe for a skilful physician to carry out may be absolutely unsafe—nay, dangerous—for the unskilled to imitate, and I feel, therefore, that the practice referred to ought to be accepted with great reservation. Dr. Johnston advocates the use of the long double-curved forceps. I myself am in favour of them, but I am aware that some Dublin obstetricians prefer the use of the straight forceps.

DR. CRONYN.—I have seen the long forceps used by Dr. Johnston in a case where, from the practice of midwifery which I was taught, and which I witnessed when an assistant at the lying-in hospital, I myself would have hesitated to use it. The os was not dilated to the size of a halfpenny; it was dilatable, to be sure, and the patient was a primipara; and I saw the instrument used by Dr. Johnston with the greatest apparent ease, and the delivery of a large child safely effected. I was much impressed by that operation. It was the first time I had seen the instrument used in this way, and I was inclined to think it very hazardous, but having seen with my own eyes, and tested with my finger the state of the parts, I confess I became a convert to the desirability of the operation.

DR. HENRY KENNEDY.—Having seen the greater number of the cases of zymotic disease referred to by Dr. Johnston, I could not fail to be struck with the fact that the patients had brought the disease in with them. If a patient exhibits signs of sickness totally independent of what may be expected to arise in connexion with pregnancy, the probability is that the seeds of the disease had been implanted in her before she entered the hospital, and in such a case the act of delivery is enough to bring into life and develop the disease. The case referred to by Dr. Johnston, in which the mind exercised so great an influence on the physical condition of the patient, was very remarkable. She presented all the symptoms of typhus fever, but when she found she was not to be neglected, but would be taken care of, the change that occurred was extraordinary, and her recovery was unusually rapid.

DR. KIDD.—With reference to the use of the forceps before the os is fully dilated, I should like to know did it ever happen that the forceps was applied and that it was found impossible to deliver the child?

DR. JOHNSTON.—In no one instance did it ever fail. I had under my care within the last month a woman who came from North Wales to be

confined. She had previously been delivered by perforation. I found that the head never entered the brim. I applied the forceps, and delivered the child. You never saw a head more distorted, and I never expected the child would survive, yet it left the hospital, with the mother, alive and well. I was prejudiced in favour of the straight forceps, but experience has satisfied me that the double-curved forceps is the more useful. One great advantage to be gained by it is, that once you get a grip it never fails. In another case the child presented an indentation on its head of an inch and a quarter long. I was nearly three-quarters of an hour effecting delivery. I never thought the child could survive, but it did.

DR. KIDD.—This is one of the most interesting subjects we have had before us for some time. I hesitate to rise to speak to this paper at all; there is such an immense amount of matter in it, that I feel unable to grasp it at a first hearing. I have tried to deliver the head with the forceps before the os was fully dilated, and I have many times succeeded in doing so, but I have also succeeded in applying the forceps and been obliged to give up the use of it—but not from the slipping of the forceps. The point I meant to raise was not with respect to the forceps used, straight or curved, but as to the amount of force necessary to be used to draw the head out of an undilated *os uteri*. If the os be dilatable, we know that we can with a moderate amount of force effect delivery, but that is the very case in which it is not necessary to use any artificial means of delivery; but if the os be not dilatable—if the membranes have ruptured early, and you have a rigid *os uteri*—if you use the forceps there you may have to use an amount of force that will injure the patient. I believe Dr. Johnston said that where the os is rigid he makes use of ordinary means to counteract the rigidity. The great difficulty is to know the amount of rigidity that it is safe to attempt to overcome. I have seen much force used with the forceps, and more than I should like to use myself.

DR. M'CLINTOCK.—The all-important and salient feature of Dr. Johnston's able and elaborate paper is the use of the forceps before the full dilatation of the *os uteri*, which practice would constitute an epoch in the history of midwifery. It opens a new era, it is so much at variance with the principles and maxims laid down by the great and standard authorities in obstetrics. But merely because it is a great innovation we are not to reject and repudiate it. Dr. Johnston stands in this strong position, that he comes forward to advocate a practice he has largely tested, and of which he is able to give most gratifying results. I think Dr. Johnston's practice and results will go this far—viz., satisfactory demonstrate that the long forceps may be applied with perfect safety to the mother and the child under circumstances where we should find

hospital. The 4 other patients confined in the ward at the same time went out well.

The 2nd did not take place till September 13, nearly 7 months, during which time there were 18 batches of patients, all of whom went out well, except 1 in the month of June, who died of liver and kidney disease; and the 4 confined in the ward at the same time with the one seized went out well. She was sent to hospital.

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1 patient was attacked with phlebitis after a natural labour, 6 hours' duration, her thirteenth pregnancy, on the sixth day. Under treatment she recovered, and was discharged well on the twentieth day.

That you may be the better able to see that we have had no epidemic in the hospital during the year, notwithstanding the amount of zymotic disease which prevailed outside, I subjoin the Tables similar to those in my previous Reports, giving the number of deliveries which took place in each ward, together with the deaths that occurred in them, and the nature of the complaints, whether zymotic or accidental.

On examining Table No. 13 you will perceive that each ward is placed in numerical order, so that by reading the column downwards—for instance, under No. 1 ward, will be seen the number of patients delivered in each month, and the deaths, if any, and the month in which it took place; also whether of a zymotic type or otherwise. And by looking at the foot of the column may be seen the total number of deliveries, and the deaths which took place in that ward, in the 12 months, and whether of a zymotic type or not. The figures in red note the primiparæ.



conditions, which are invariably associated with this morbid change in the tissue of the heart.

To say that it is a degeneration is merely affirming that its nosological position is among chronic organic diseases of a general type.

Of little more practical importance is the assertion—and it is only asserted—that a certain analogy exists between this change of the constituents of muscle-fibre into fat, and the conversion of flesh into *adipocere*.^a

For, surely, we cannot be persuaded, without abundant proof, that the conditions which, under the influence of vitality, induce this retrograde metamorphosis of muscle, are identical with those which, long after death, convert organic remains into that class of substances found, under varying conditions, in the receptacles of pathological specimens, in certain strata of the earth, where organic remains are abundant, and which is sometimes to be found in the soil of old cemeteries.

And even admitting that the changes are analogous, although occurring under conditions so widely different, there is neither proof nor probability that this substance, *adipocere*, margarate of ammonia, is formed in the tissue, replacing the healthy muscular structure. Now, what are the facts from which we may hope to arrive at a just conclusion as to the nature and cause of this disease?

A posteriori reasoning from the heart lesion alone, does not appear to have given any satisfactory result. Let us then endeavour to attain it by reasoning back from other symptoms and conditions.

In reviewing these, the question arises, if this be a change of muscular tissue, analogous to that producing *adipocere* after death, why is the heart peculiarly prone to it, and why does it not occur as frequently in other muscles?

Then we are led to reflect on the differences between *heart-muscle*, and this tissue as found in other parts of the body. We know that it differs in the arrangement of its fibres, but also chemically in this respect, that the sugar, *inosite*, which Scherer first obtained from muscular tissue, occurs much more abundantly, as Lehmann has demonstrated, in the tissue of the heart than in other muscle. Now, the most prominent symptom or condition accompanying this change, is atheroma and calcification of the larger arteries. This degeneration is looked upon not only as a pathognomonic sign of the fatty change, but, further than this, as identical with it. Virchow writes relative to atheroma:—"When the matter began to be examined more minutely, and fatty particles were found at very different points in the walls of the vessels, both when atheroma was and was not present—when at last the conviction was obtained that the process of fatty degeneration was always the same, and was identical with the atheromatous change, it became the custom to unite all the

^a Dr. Quain. Med. Chir. Trans. Vol. XXXIII.

forms of the fatty degeneration of arteries under the designation *atheroma*." Now, the identity of the pathological processes which result in the fatty and calcareous degenerations being admitted, and taking into account the chemical relations of the component elements of the tissues involved in these changes, I believe pathologists are in a position to attempt an explanation of them, if not as yet indubitable, at least more satisfactory than the views hitherto maintained. The explanation to which I refer is suggested by the chemical peculiarity of heart-muscle above mentioned, namely, the larger amount of inosite contained in it than in other muscle; and the known chemical relations of this body, especially its behaviour with calcic salts, in the presence of a ferment.

Now, inosite, one of the glucoses ($C_6 H_{12} O_6$), undergoes first the lactic, and secondly the butyric fermentation with chalk and casein or fibrin: lactic and butyric acids being formed, and lactate and butyrate of lime resulting.

The conditions existing in the fatty degeneration of heart-muscle are those in which such a change, or a change analogous to this, may be expected to occur.

Because we know that carbonate of lime is in excess in the system (not absolutely but relatively, as will be subsequently considered), which salt coming into contact with the vascular walls, meets, in infinitely minute quantity in their muscular layer, this substance inosite, and in the same tissue *syntonin*, which latter acting as a ferment, the above decomposition of the muscle sugar results. As the degeneration progresses, changes in the histological characters of the tissue advance *pari passu*, with the chemical metamorphosis of its elements. Gradually the normal cell-element of the muscular fibre disappears, and is replaced by minute particles of a substance having the nature of—not a fat, but—a soap, that is, of a compound between a fatty acid and a metallic oxide. Now, this view not only explains the relationship between fatty degeneration and atheroma, but also their identity, as assumed by Virchow, in the passage above quoted.

Thus, it will be seen, the term *fatty* degeneration should be restricted to the deposition of real adipose tissue upon the surface of the heart, and around its muscular fascicles; while *soapy* degeneration would be the more appropriate, if not very elegant term, by which to designate the necrobiosis which is at present called fatty degeneration of the heart. This theory has been led up to by facts *à posteriori*. Now, assuming it as true, should we expect from it results which are facts?

Professor de Morgan, in his "Budget of Paradoxes," in the consideration of the relation of facts to theory, asks the question—"What are large collections of facts for? To make theories *from*, says Bacon; to try ready-made theories *by*, says the history of discovery. Whether, however, we take facts in subordination to theory, or the reverse, matters

little for our present purpose; we have to regard the observation of facts, ascertained experimentally or otherwise, as the test of theory.”^a

We should expect, assuming the above conditions to be the cause of atheroma, that this degeneration would commence in the middle coat of arteries, where muscular tissue is found—such is the fact.

Again, we know that solutions of sparingly soluble carbonates, having free carbonic acid in solution, on being deprived of this latter, tend to deposit such salts. Hence we should expect that the blood, receiving its lime salts either directly as ingesta, or indirectly from the *débris* of osseous tissue, or other physiological process, first in the venous system, would retain these salts in solution, in the very minute quantities in which they must be held, until it had parted with its carbonic acid—in other words, until it had reached the left heart.

This appears to account for the well-known fact that the left side of the heart is more liable to the change under consideration than the right, and which Sir Thomas Watson justly considers to be “a portion of a more general fact—namely, that the arteries are more liable to chronic morbid changes than the veins.” And here, moreover, is the answer to an objection to this theory which I anticipate—namely, although muscular tissue does not exist in veins to the same amount as in arteries, why is this change not found even to a small amount in veins? But it is found to some extent in the venous, as well as the arterial side of the heart, in consequence of the supply of the coronary arteries. We know that substances tend to deposit from solution in proportion to the roughness of the surface of the containing vessel, and that they are disposed to deposit in proportion also to the number of points of irregularity presented—as seen in crystallisation on a thread, particle of dust, &c. Now let us (mindful of this) consider the contents of the chambers of the heart. We should infer that substances would be deposited from the blood more readily in the ventricles with their *columnæ carneæ*, *musculi papillares*, and *chordæ tendinæ*, than in the auricles.

But we should expect that the lime deposit would occur less frequently in the right, in consequence of the carbonic acid in the blood. A glance at the auricles is sufficient to enable us to prognosticate which of them would be the more obnoxious to deposition—the right auricle, with its five openings, remains of foetal structure, Eustachian and coronary valves, tubercle of Lower, and *musculi pectinati*; and the left, with hardly any irregularity except its *musculi pectinati*, and these fewer in number than on the right side.

Now, according to Professor Aitken, the frequency of degeneration in the chambers of the heart is relatively in the following order:—Left ventricle, right ventricle, right auricle, left auricle. And this, I suppose,

^a The Probability of Error in Experimental Research. *Quart. Journ. Science*, Jan., 1873.

is the reason that deposit occurs at those points where the stream of blood is constantly "butting" against the arterial wall. This view is, at all events, more in accordance with what little we know of the so-called "provisions of nature" than the idea that the wall is worn down by the occurrence of the pulse wave. Other similar coincidences, or explanations, whichever they may be, will be noticed subsequently; we will, at present, confine our consideration to the nature of the morbid process itself.

We are assuming that this change is brought about by a metamorphosis, or re-arrangement, of the elements of which inosite is composed; but it is necessary at first to observe that this process, which we pre-suppose, is wholly different in kind from that by which adipocere is produced.

The former is a vital action, dependent on physiological energy, on active affinity; the latter is a decomposition dependent on death, on the suspension of that vital energy which is the motor influence of organic function, on the *dissolution* which is the opposite to *organic affinity*. In short, the one is a result of vitality, the other of *eremacausis*—of vitality, however, under abnormal conditions.

But it is not because it is a vital action that it cannot be explained by natural forces, or reduced to the expression of a natural law. I know that many persons consider as idle all attempts at reducing physiological functions to processes regulated by the natural forces, which are recognised as the agents operating in the inorganic department of nature. But the researches of Professor Haughton and others have done much to remove this prejudice from the minds of scientific men. The inconsistency of this unphilosophical view of natural phenomena, which would divide organic from inorganic function, attributing to each a distinct set of forces, is well expressed by Professor Thompson:^a—"Much mystery has been thrown over the organic world, and particularly over the animal creation, by a kind of silent agreement entered into by many cultivators of science, that the processes to which we are indebted for our existence are too minute, and are governed by what have been termed such vital dynamical laws, that they must ever elude human inquiry. Now, this is a mode of raising up artificial difficulties which are not found in the extensive field of nature, and it may be with truth affirmed that as far as the production and reproduction of animals are concerned, we are not in a condition to predicate where our knowledge must stop. It has been well said by Liebig, that the term dynamic is about equal to that of specific in medicine.

Everything is *specific* which we cannot explain, and *dynamic* is the explanation of all we do not understand.

We will now, therefore, consider the change resulting from simple chemical affinity between inosite, lime, and a catalytic capable of setting

^a Dict. of Chem.—Art., "Animal Chemistry."

up lactic acid fermentation. First, one molecule of inosite becomes two molecules of lactic acid— $C_3H_5O_3 = 2 C_3H_5O_3$. It is believed that here no other substance is produced. Lime being present, lactate of lime is formed. The action, however, under ordinary circumstances, does not cease here, but the butyric fermentation supervenes—due, M. Pasteur believes, to the influence of a minute living organism, the only known animal ferment; the lactic acid is converted into butyric— $2 C_3H_5O_3 = C_4H_7O_2 + 2 CO_2 + 2 H_2$ —and butyrate of lime results. Now, the pathological process, which we maintain is analogous to the above, most likely does not proceed so far, the probability being that it is the para-lactic or sarco-lactic acid, an isomer of lactic acid, which is formed. This latter body is obtained from muscular tissue, and is prepared artificially from the ethylene compounds. The method of its formation within the body, however, is necessarily matter of speculation, but it is probably formed from inosite. If this were known, it would supply a link, at present deficient, in the chain upon which this hypothesis hangs.

But, considering the nature of the substances composing the tissues changed, a very strong probability exists, strengthened by the circumstances above stated as favourable to the view, that the changes producing this condition of heart-muscle are analogous to the processes above described, and that both atheroma and the muscular degeneration are results of the combination of a fatty acid (obtained from the metamorphosis of inosite) with lime.

It must be clearly understood, however, that in neither case—the artificial fermentation or the pathological process—is lime essential to, or the cause of, the change. In the first it is used merely to obtain the acid in a convenient form; in the other it takes the already formed acid. Now, this is an important point. It is not the metamorphosis of inosite which is the morbid process; it is the combination of lime with the result of that metamorphosis. Probably the change of inosite into a fatty acid is a normal one; probably it is by such a change the tissue is nourished during health, the effete material being thus removed giving place for the formation of the new. But the morbid condition is that the newly-formed body is taken up by the lime when the latter exists in the blood, as already described, quicker than it would have been normally eliminated, and more rapidly than the laying down of new tissue can replace it; hence the thinning, the softening, the degeneration of the heart wall, and the gradual disappearance from it of the characters of muscular fibre.

And this is how it was stated above that in atheroma lime is in excess in the system; the absolute amount may be exceedingly minute, and the amount of lime ingested may not be in excess of the quantity ingested at other times, but the amount actually circulating with the blood is in excess, *relatively* to the elective affinity which should assimilate it.

There may be two reasons given to explain this excess of lime—namely, that just referred to, that the tissues for which it is the normal material have failed to assimilate it; or else, that it is the product of the breaking down of osseous tissue.

The former is the more probable; for it is more in accordance with known laws, and coincides better with the views held by modern pathologists with regard to the function and growth of the tissues,* to consider these lime deposits as never having existed in the body as bone, but that the lime, being absorbed as pabulum for it, and failing to be assimilated by this tissue—this failure depending apparently on a decrease in the physiological activity of the tissue itself, or the nervous supply which controls it—is carried on by the blood, until it is either deposited when accident affords circumstances favourable, or combines with the constituents of other tissues, forming products which are deposited in, or take the place of, healthy structures. The condition, then, suggested as immediately preceding this process in the chain of cause and effect, is an inability of osseous tissue to appropriate the material specially ingested for its nourishment.

Now, there are facts existing in connexion with the degeneration which corroborate this view. First, as regards *age* and *sex*. Passing as undetermined the question of the relative composition of bone at different periods of life, it is beyond dispute that atrophy of bone is a natural result of old age, and that women are more liable to fracture of the bones and such accidents arising from this cause than men. Such is also the case in the heart degeneration. "In the female a tendency to the degeneration seems to have been observed at a much earlier age than in the male, but between the ages of fifty and eighty in both sexes the greatest number of cases have occurred."—(Aitken).

According to the doctrine of "tissue diathesis," which has been recognised since the time of Bichât, and having regard to the close similarity of its conditions and views, this heart affection may be grouped with osteo-malacia, and rickets, as a sub-division of Class B. of "General Diseases" in the nomenclature of the College of Physicians.

It would be quite as rational to give cancer of the stomach a place among local diseases only, as to leave this heart degeneration among diseases of the circulatory system.

In each of the three diseases there is mal-assimilation of lime salts, but in each a different train of effects results from this cause, giving to each its individuality and peculiar symptoms. The similarity between some of the secondary symptoms of the heart lesion, and rickets, is striking. Both exhibit well-marked evidence of failure in *general* assimilative power. Chemical changes of a low (inorganic) type

* Beale—"How to Work with the Microscope." Chapter on "New Views on the Structure, Formation, and Growth of Tissues."

occurring, instead of the higher (organic) functions of vitality, there being in both a proneness to decomposition of the contents of the intestines. It is to be observed that in physiological phenomena, there are in action chemical affinities which appear to group themselves into two distinct classes. Doubtless both sets are controlled by the same laws, and both are affinities of the same ultimate nature.

But the one group appears to obey a subtler or more refined affinity, while the other group seems to act in accordance with a coarser or more apparent affinity. It is needless to observe that these words, "subtler" and "coarser," have reference, not so much to the affinities themselves, as to our knowledge of them, and our means and modes of investigating them.

Take, as an illustration of the one group, the irritation of the blood; and, as an example of the kind of affinity which acts in the other, take the dehydration of the tissues by the application of strong sulphuric acid, or the action of the atmosphere and of light on the cuticle. Now, these two sets of affinities act in constant antagonism one to the other, and produce an equilibrium which we call *vitality*.

In health, a balance between them is maintained; in disease, there is a preponderance on one or the other side.

In health, which is perfect vitality, the elements of the tissues are held together and interchange by virtue of a force—for which there are many names, *vital power*; *vital*, *physiological*, or *molecular energy*, &c., but—which we will now call x , which x is sufficiently strong to counteract and overcome what we have spoken of above as the coarser or more apparent affinity, which we will term y . In perfect death the action of x is entirely suspended, and y acts unchecked by x , which during life counteracted it.

But between these extremes of perfect life and perfect death, there are all kinds and degrees of partial life and partial death—waverings of the balance which we know as *diseases*. In these states the intensity of x may be gradually lowered, so that its antagonistic power, in proportion to y , is diminished, and this in various forms and in varying degrees. As instances of preponderance in this direction may be cited the decompositions occurring in a weak stomach, and in gangrene. So, in like manner, the force of x may be raised, destroying the equilibrium of health on this side, as, for instance, in wasting diseases and in local hypertrophies. But y never varies; its strength is always fixed and definite. Now, according to the degree of departure from the health equilibrium, the integrity of the tissues is interfered with.

When the change of x is to the *minus* side, those tissues first fall under the power of y , which least required the power of x for their maintenance and vitality, such as the hair, teeth, skin, &c. This lowering of x is to be understood by the expression "molecular

feebleness," as used by modern writers on pathology. This gives us, then, some such arrangement as the following:—

x = organic force.

y = inorganic force.

$x \times y$ = health.

$\frac{x}{2} \times y$ = disease (gangrene, decompositions, &c).

$2x \times y$ = disease (wasting diseases and hypertrophies, &c).

It is this molecular feebleness which we suppose as permitting inorganic changes to take the place of healthy vital action in mineral degeneration; and also, but in another way, in the bone diseases named.

The extreme excess of lactic acid in the urine of rachitic children suggests the existence of a condition in this disease allied to that which we have endeavoured to explain as obtaining in the heart degeneration. The profuse perspiration of the head and upper part of the body in both diseases is also remarkable. And in both diseases the nervous and cerebral symptoms are well marked. But it appears that they differ in these diseases in their relative sequence to other phenomena. In rickets, nervous derangement seems to be functional, dependent on a constitutional blood taint. In the heart lesion, nervous and cerebral symptoms are generally, as far as can be made out from the history of those cases, previous to the mal-assimilation which probably results from this derangement of nervous influence. And this carries us a step further, and suggests the inquiry—Is this mal-assimilation of lime-salts, resulting in heart degeneration, dependent on deranged nervous influence? It is no uncommon condition that normal secretions, failing, through nervous lesion, to be eliminated by their proper channels, cause a systemic poisoning. So, in like manner, substances which to the healthy adult organism are *food*, to the aged, in whom nutritive energy has declined, become *poison*, circulating without being assimilated. That nervous conditions influence the chemical metamorphosis of the tissues, is proved by the elimination of sugar from the kidney by irritation about the fourth ventricle. And molecular feebleness of all tissues is, without doubt, due to diminished or altered energy of the nervous influence which controls assimilation. Then, is heart degeneration really a brain disease? The statistics and natural history of it yield an affirmative probability. They point to exhaustion of nervous energy as the first of the long train of symptoms which may extend over years, and finally result in rupture of the heart wall. They do more; they show the peculiar kind of wear which leads to this disastrous result. They affirm that the tendency to this heart disease is directly as intellectual activity, and inversely as neuro-muscular activity. Indeed, so intimately is nervous influence connected with assimilative power, that on its integrity

seems to depend the maintenance of all such function, and leads us to the belief that its derangement is the cause of all morbid phenomena, that—

“This is the true beginning of our end.”

This view of the pathology of heart rupture, although, indeed, discerned but by “the dim and treacherous ray of speculation,” suggests some practical hints which appear to be worth attending to.

Diseases which are known to depend on abnormal chemical action have for long time been treated chemically, with more or less successful result—for example, the administration of lithia in gout, the removal of the coloration caused from nitrate of silver by potassium iodide as proposed by Professor Melsens, and the action of the mercuric perchloride on the sulphuretted hydrogen deposits in the skin, as I have endeavoured to describe in another place.* The same kind of treatment is sometimes adopted empirically, the nature of the chemical action not being very clear, as in the administration of alum in lead poisoning.

Now, the indications of treatment are in this case two-fold. First, to endeavour to reduce, as much as possible, the supply of lime at its two probable sources—namely, ingestion, and the disintegration of osseous tissue; and secondly, to carry through the lime, which must inevitably be present in some amount, in as soluble a form as possible. The attempt at the first must be made on obvious dietetic principles; the second by our knowledge of the chemical relations of lime. Now, the agents which we would expect to carry away the carbonate and phosphate of lime are the nitric and hydrochloric acids. And these, in the form of pernitrate and perchloride of iron, appear to be the most suitable remedies. Whether or not iron have any specific action on the circulatory power, it seems to obviate or correct the tendency to molecular feebleness. And although the phrase, “to strengthen the muscular fibres of the heart,” which we occasionally hear, does not convey any very distinct idea of the action of this remedy, apart from its astringent power on all tissues, its use as a nervine tonic appears to be indicated in cases of mal-assimilation. Of course a degeneration cannot be *cured*, but it is believed that the tendency to further change may be arrested by attention to the indications above specified, combined with general treatment pointing to the same ends.

Treatment, however, is but a secondary motive of pathological inquiry. A disease cannot be treated until it is diagnosed, and the recognition during life of this abnormal metamorphosis, by its effect on the secretions, is a matter of profound interest.

* Brit. Med. Journ., Oct., 1868.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VI.—*The Significance of "Congestion Papilla," or "Choked Disc," in Intra-cranial Disease.** By H. R. SWANZY, M.B., F.R.C.S.I.; Ophthalmic Surgeon, Adelaide Hospital; Surgeon, National Eye and Ear Infirmary. .

THERE is hardly any ophthalmic subject which has such interest for the physician as the symptom with which I beg to occupy the time of your Society for a few minutes. It is a subject which has been before the profession since the year 1860, when my late master, Professor von Graefe, wrote his first paper upon it. The medical literature of every country now contains records of cases where this ophthalmoscopic appearance aided in the diagnosis. To-night I have no particular case upon which to hang my paper, and my apology for bringing forward the subject in this general way is, that there still seem to be doubts in the minds of some as to the true nature of the congestion papilla, and also that I hold an opinion, with regard to its value as a symptom in intra-cranial disease, which is, perhaps, somewhat different from that of others.

In the first instance, what appearance does this congestion papilla, or choked disc, present? I believe that the name congestion

* Read before the Medical Society of the College of Physicians, February 10, 1875.
[For the discussion on this Paper, see page 243.]

papilla has led many to suppose it to be little more than congestion or excessive hyperæmia of the optic disc. Choked disc may be, for this reason, a better term than congestion papilla. It has also been called ischæmia papillæ. A better name than any is intra-bulbar neuritis, first employed by Hermann Schmidt, if I mistake not. It is much more than congestion or excessive hyperæmia, it is a tumefaction of the optic disc—that is to say, of the intra-bulbar end of the optic nerve. The tumefaction extends only a short way into the surrounding retina, but it is very prominent; it bulges into the vitreous humour considerably. In true cases of congestion papilla I think the swelling has a somewhat greyish or semi-translucent appearance, and is not of a dusky red hue throughout. The retinal arteries are very thin; the retinal veins, on the other hand, enormously distended and very tortuous. As the swelling is so prominent, and at the same time extends only a short distance around, its sides are necessarily very steep, and the result of this is to cause a peculiar curve in the central vessels of the retina, as they pass round the edge of the swelling to reach the plane of the retina. As well as I can describe it in words, this is the appearance of a congestion papilla. There is no doubt but that its immediate cause is a strangulation of the bulbar end of the optic nerve. This strangulation produces engorgement of the retinal veins, and a serous exudation at the lamina cribrosa, where the constriction takes place. It is chiefly of this serous exudation, accompanied with some proliferation of the cellular tissue, that the tumefaction which we see with the ophthalmoscope consists. The same constriction which gives rise to distension of the retinal veins, by retarding the flow of blood through them, causes attenuation of the retinal arteries by preventing the passage of blood into them. How is this constriction produced? In one of two ways. First, by the direct pressure of an orbital tumour, or of the product of an inflammation in the orbit on the nerve itself in this part of its course. We can hardly be misled into a diagnosis of intra-cranial disease by a case of this kind. The fact of the choked disc occurring in one eye only is sufficient to show that its cause must be a peripheral one. Where the cause is situated within the cranium, it is always binocular. Double orbital tumour, producing also double congestion papilla, is a combination most unlikely to occur; and, should it take place, the diagnosis would probably be easily made by some of the ordinary signs of orbital tumour. It is right to mention one remarkable case, which did give rise to the

error I allude to. It is reported by Krohn.* It was a case of symmetrical tumour of the optic nerves just at their entrance into the globes. Each tumour encompassed the entire nerve, lying within its external sheath. There was double congestion papilla, and no sign of orbital tumour, for the growths were too small to give rise to any. Although there were no head symptoms, an intra-cranial tumour was diagnosed, the presence of malignant disease of the ovaries making it seem all the more probable. After death the parts within the cranium were found perfectly normal.

The second mode of production of a congestion papilla is by an increased pressure within the cranium. By this the fluid is driven out of the subarachnoid lymph space into the subvaginal lymph space of the optic nerve. The latter space lies between the external and internal optic sheath, and ends in a *cul-de-sac* at the lamina cribrosa. Great pressure is thus brought to bear on the optic nerve in its entire course, but this culminates at the blind end of the sac, where the power of distension is limited. The flow of venous blood is consequently retarded, and serous exudation takes place at the optic disc, with the results already described. This is the accepted explanation of the mode of origin of the congestion papilla in most cases of intra-cranial diseases where it occurs. It makes not the least difference in what part of the brain, or whereabouts within the cranium, the cause of the increased pressure be situated. A tumour of the cerebellum, or of one of the lateral hemispheres, may just as readily give rise to a congestion papilla as if it were situated in the corpora quadrigemina. It is not necessary that the optic nerve should be directly implicated in the disease, either at its origin or anywhere in its course. The cranium being a closed cavity, wherever the new growth within it happens to be, it will have the effect of increasing the pressure equally in every direction, and of forcing the lymphatic fluid out of the sub-arachnoid into the sub-vaginal space.

The next question is—In what cases may we expect to find congestion papilla? Dr. Clifford Allbutt's reply is—meningitis, hydrocephalus, and intra-cranial tumours. Every observer admits that intra-cranial tumours give rise to congestion papilla, and I think most of them would at least also allow that it is the most frequent cause of this appearance. The only wonder is that congestion papilla is not found in every such case, if the

* Klin. Monatsbl. f. Augenh. 1872. P. 98.

accepted mode of its production be the true one. Where the tumour is small, we may imagine that the disturbance produced by it is inadequate to give rise to the choked disc; but still cases of it are recorded where the new growth within the cranium was comparatively small, while enormous tumours of the brain are every day coming under our notice, in which not only is there no congestion papilla present, but often also no other diseased condition of the optic nerve. No satisfactory explanation of this apparent anomaly has as yet been given. Possibly it may depend upon individual differences in the anatomical relations of the lymphatic space and optic nerve, which are yet to be ascertained. Hermann Schmidt* puts forward the hypothesis that in some cases, by compression at the foramen opticum, either from a tumour or otherwise, the communication between the arachnoid space and the sheath of the optic nerve may be cut off, and thus the transport of the fluid into the latter prevented. I have always inclined to an opinion that the rate of growth of a tumour might be the ruling factor in this respect. If the tumour increases in size very slowly, the parts may be enabled to accommodate themselves to the pressure, or, by the gradual absorption of brain substance, there might actually be no increase of intra-cranial pressure produced. On the other hand, if the tumour from the beginning grows very rapidly, or, although growing slowly at first, if it afterwards advances quickly, we can understand that, for converse reasons, it would be more likely to cause congestion papilla.

With regard to hydrocephalus, Dr. Allbutt says:—"Ischæmia papillæ seems in many cases to be the earliest stage, as I have certainly noticed it in early stages more than once. Herein," he says, "I am obliged to differ from Graefe, who has only found simple white atrophy in cases of hydrocephalic amaurosis. It is likely, however, that Graefe has not seen hydrocephalic children until the mischief is old and the loss of sight obvious." It is to be lamented that, although Dr. Allbutt saw congestion papilla attend the early stage of hydrocephalus more than once, he only records one such case in his Appendix; the other five recorded were without the choked disc. I have sought in vain for a case of congestion papilla dependent on hydrocephalus by any other author. I do not in the least agree with Dr. Allbutt as to von Graefe's opportunities of observation in this matter. Ophthalmic surgeons are applied to in Germany upon much slighter provocation,

* Archiv. f. Ophthalm. XV., p. 197.

if I may so speak, than in this country; and even if the patients were not brought to Graefe, he had one of the largest general hospitals in Europe at hand in which to investigate a question of the kind. I have examined at least half a dozen cases of hydrocephalus with the ophthalmoscope, and I have never seen any other alteration than atrophy of the optic nerve, nor in any of these was there the slightest trace of previous inflammation.

And now, with regard to meningitis as a cause of congestion papilla, I shall venture first to express my own opinion—namely, that the true congestion papilla, dependent on any form of meningitis, is extremely rare at any time of life, and that when it does occur it is almost always in the meningitis of children or young children. I have formed this opinion from the records of published cases, and to some extent from my own observation. The number of cases published in which meningitis produced choked disc is very small. Dr. Allbutt gives two cases of tubercular meningitis, and one of meningitis after “fever,” which came under his own notice—one case of tubercular meningitis published by Manz, and one of tubercular meningitis recorded by Pagenstecher. Berthold^a observed congestion papilla in a girl ten years of age, who died of purulent meningitis. Socin^b relates the case of a patient whose disease he diagnosed to be a circumscribed meningitis of the base of the skull, and in whom he found imperfectly marked congestion papilla. Granting that the ophthalmoscopic appearance in all these cases was that of true congestion papilla, they amount in all to only seven, occurring in the literature of the last nine years. Possibly one or two other cases have been recorded which have escaped my notice. With regard to the preceding six years, from 1860 to 1866, I have not had it all at hand; but in those journals of that period which I do possess, there is no case recorded of congestion papilla dependent on meningitis. Graefe, in his first paper, says:—“If this condition has been correctly brought into connexion with a mechanical hyperæmia, it should also be found with other states, which would increase the pressure at the base of the brain and in the orbit. Experience has confirmed this surmise. I must, however, confess, that in only three other cases have I seen such excessive swelling of the papilla, as in those four of cerebral tumour already published. One of these was also a case of cerebral tumour, as the autopsy proved; and in the other two, the

^a Archiv. f. Ophthal., XVII.

^b Deutsches Archiv. f. Klin. Med.

symptoms argued decidedly for tumour of the brain, but up to the present the anatomical evidence is wanting. I have observed a slighter degree of swelling, but otherwise the characteristic alterations, in several cases of orbital tumour; in a case of erysipelas, after which inflammation of the cellular tissue of the orbit, with exophthalmos, took place; in a case of inflammation of the capsule of Tenon; in two cases which did not come to *post-mortem* examination, but in which the symptoms spoke, with all probability, for an exudation at the base of the brain; and, lastly, in several cases of subacute cerebral disturbance, which were probably due to encephalitis or encephalo-meningitis." All the orbital affections here referred to may be left out of consideration for the purpose in hand. It was evidently Graefe's opinion that a less pronounced form of congestion papilla was sometimes found in cases of meningitis.

As regards my own experience, I could wish it was more extensive. By itself I would not think it sufficient to authorise me in forming an opinion on the subject; but, taken in connexion with what others have observed or have not observed, I may be permitted to put it forward. Thanks to the kindness of my colleagues at the Adelaide Hospital, I have had the opportunity, from time to time, of examining five or six children altogether, with symptoms which were considered indicative of meningitis. In all but one of these cases the ophthalmoscopic appearances were either negative, or consisted merely in congestion of the central vein of the retina, with some hyperæmia of the disc. In one case—a child of about five years of age—the appearance was different. At first glance I fancied it to be a true congestion papilla; the optic disc was very much swollen, the central vein greatly engorged, the artery thin; the colour of the tumefaction, however, was of a deep dusky red, and had none of that grey tint or peculiar semi-translucent appearance; and, although rather prominent, its sides in no direction were very steep, but became gradually bevelled off to the plane of the retina. The patient, I regret to say, was removed from under our care while the disease was still at its height. This case suggested the thought that perhaps some of the cases described as congestion papilla with meningitis were not cases of true congestion papilla, but of this other form which resembles it. It is a fact, recognised by many writers, that it is sometimes by no means an easy matter to decide whether a given case is one of congestion papilla or of descending neuritis. I think

it should never be attempted to make a diagnosis by aid of the ophthalmoscope unless the appearances are so well marked as to admit of no doubt about their nature. In a very valuable paper in the *British Medical Journal* for 15th June, 1872, Dr. Broadbent says:—"According to my experience, while some degree of hyperæmia of the disc is common in tubercular meningitis, well-marked choking of the disc is rare, and I have never met with an extreme example, such as I have met with in cases of cerebral tumour."

In conclusion, Sir, it would seem to me that, while true congestion papilla is not pathognomonic of intra-cranial tumours, it is extremely rare as a symptom of any other intra-cranial disease. It has been observed in a few cases of meningitis, chiefly in children, so that its value as a symptom of cerebral tumour is even greater in adults than in young people.

ART. VII.—*The Pathogeny of Hæmorrhagic Infarction of the Lungs.*^a By GERALD F. YEO, M.D., Assistant-Physician to the Whitworth and Hardwicke Hospitals; Lecturer on Institutes of Medicine in the Carmichael School of Medicine.

FOR many years pathologists have been familiar with the hæmoptysis which is a frequent, and often a fatal, symptom of heart affections; and the pathological changes in the lungs, with which such hæmorrhage is usually associated, have been found to be strikingly similar in the majority of cases, and easily distinguished from the many other lesions which give rise to spitting of blood. Laennec,^b who first described the anatomical characters of the lung affection, called it *pulmonary apoplexy*, a name which has held its ground ever since, in spite of attacks from all quarters; and the likeness to the cerebral lesion, which suggested the term, is rather borne out than refuted by modern research. I do not, however, wish to uphold the name as quite satisfactory, nor will I adopt it, because of the indiscriminate manner in which it has been applied to various head affections—the word "*apoplexy*" being now used rather to express the clinical idea of a group of symptoms, than any single pathological process. The name "*infarctus*," which has been used for a long time in Germany, has a more

^a Read before the Medical Society of the College of Physicians, February 10, 1875. [For the discussion on this Paper, see page 243.]

^b *L'Auscultation Médiate, &c.* 1819. Tome II., p. 40.

definite meaning, and is more expressive of the condition at present under consideration.

The anatomical characters of the lesion differ somewhat according to the period which has elapsed since its commencement, as the hæmorrhagic centres go through a series of changes which are variously modified in each case by its individual peculiarity. A few days after their formation they appear as isolated spots of intense engorgement, varying in number—there being seldom fewer than three or four of notable size. They are situated in different lobes of a lung; or, in many cases, both lungs are affected. These nodular solidifications are extremely hard and resistant, almost black in colour, and perfectly airless. One of their most striking characteristics is their sharply defined margin, the lung tissue immediately around them being soft, pale, and elastic, and—at least in the early stages—to all appearances healthy; owing to its property of partially collapsing when removed from the body, it retracts from the indurated nodules, which are left standing out on the pleural surface like knobs, which prominence suggested the name *furuncular pneumonia*. Their size varies very much, though they never occupy more than a comparatively small part of a lobe, seldom attaining a diameter of more than three or four inches, and they are frequently not larger than a filbert nut.

Their shape is a point upon which I wish to lay particular stress, both as it is most characteristic and as it helps to explain their production. When situated on a flat surface of the lung, their superficial aspect is circular; but, when they include the sharp edges of the lung, which is a very common occurrence, the outline is distinctly wedge-shaped. When a section is made of them they are always found to present a typical cone-shape, the apex of which points to the root of the lung, and the base is situated at the surface. Even when placed deep in the structure of the lung, this cone-shape may be seen by splitting them in their long axis, which points to the entrance of the great vessels. The surface of their section is finely granular, and the deep black colour hides the markings of the lobules, which are generally so well seen in sections of pneumonic consolidations, from which the cut surface of the hæmorrhagic infarction may be distinguished by their homogeneous blackness. Another point of interest in connexion with their cause is, that the vessels ramifying in the cone, which enter its apex, are invariably filled with tough, adherent, dry fibrinous clots, even extending to

the very small branches. The bronchi are usually more or less filled with bloody mucus, which varies in character, according to the period at which the parts are examined.

These appearances are often first noticed in the dead-room, as the difficulty of recognising their production during the life of a patient is extreme—for all the symptoms, which may be considered as characteristic of them, occur in cases of heart disease, without any such lesion of the lung being found after death. As the sequence of these clinical phenomena may guide us a little in arriving at a correct conclusion as to their cause, I shall briefly enumerate the leading symptoms.

The first indication, commonly, is an attack of sudden, intense localised pain, or stitch, in the side, followed by great distress, uneasiness and dyspnoea. After some hours (in two cases, of which I have notes, six and five hours respectively) more or less copious spitting of blood comes on. This is the most constant symptom; but the quantity of blood varies in different cases, as does also its colour, although in some cases the blood is extremely dark, which fact Graves^a and Walsh^b consider characteristic; and, no doubt, it is so when it has the sooty look they describe, but this is too seldom found to make the sign of much practical value. In cardiac cases the bleeding generally continues to the end, or at least for a considerably longer time than most forms of pulmonary hæmorrhage. In cases where the heart is healthy, the bleeding may stop in a day or two, sometimes being replaced by a copious discharge of purulent matter, showing the formation of abscess.

In most cases the physical signs of solid lung-tissue cannot be elicited, as the area is too small, and it is only when the hæmorrhage is actually taking place that the bubbling râles, described by Laennec, can be produced; I have never been able to detect them. In one case I could distinguish a small circumscribed area of dulness, over which there was audible a clear harsh friction sound. Some authors lay great stress on the sudden increase in the precordial area of dulness, which they explain by the sudden mechanical dilatation of the right heart from increased pressure in the pulmonary artery. This physical sign I have had an opportunity of observing in two separate cases in a most striking manner, but in each of them I was able to satisfy myself, by the *post-mortem* examination, that the dulness depended upon the solidification of

^a Clinical Lectures. 1864. Page 540.

^b Diseases of the Lungs. 1860. Page 416.

the edges of the lungs covering the heart, and not upon sudden distension of the right cavities.

The sudden occurrence of irregularity of the heart-beat is a sign of considerable value and great constancy. I have never been able to meet with the sudden disappearance of a well-marked murmur which has been mentioned by some as a sign.

Although the typical examples given in his description of the disease are associated with exactly the kind of heart affection which most commonly produces parenchymatous bleeding, Laennec^a does not attempt to connect the heart and lung lesions as cause and effect, but immediately after his description became known, writers seem unanimous in ascribing hæmorrhagic infarction to undue strength of the right side of the heart, just as the cerebral disease may be induced by hypertrophy of the left ventricle; at the same time Laennec's view, that the blood oozed into the air-cells from the terminal branches of the pulmonary artery, was generally accepted, which same explanation was given by Andral^b of a lesion under the title of "*Lobular hyperæmia*," the clots in the vessels being supposed to depend on the stagnation of the blood from its non-aëration.

The chief opponent of this view was Sir Thomas Watson,^c who took exception to all these explanations. Although I think his views are quite untenable, as they have been accepted by many of the English text-books, I shall describe them briefly. He considers valvular disease of the *left* side of the heart to be the immediate cause of the lung complication, and that the primary hæmorrhage is into the larger bronchi (from the bronchial artery), some of the blood being drawn into the air-vesicles during inspiration causes the blocking up of a limited region of the lung. This ingenious theory was founded on one single case of suffocation by hæmorrhage into the air-passages, in which the lungs were found to be studded with small nodular consolidations. As the case is not followed by confirmatory observations, I am inclined to reject the theory on the following grounds:—It is not in accordance with the common clinical history of the affection, as the hæmorrhage usually occurs some time after the dyspnœa, &c. There was not sufficient time for the development of infarctions in the case given by Sir Thomas Watson, as the patient was dead in "two minutes."^d

^a *Loc. Cit.* P. 49.

^b *Anat. Path.* 1830. P. 299.

^c *Lectures on Prin. and Prac. Physic.* 1857. Vol. II. P. 152.

^d *Loc. Cit.* P. 156.

It seems physiologically impossible that the air-vessels could be so tightly filled with a viscid fluid like blood, by a few inspiratory efforts, as to displace the reserve, residual, and permanent air from them. This view does not explain many of the *post-mortem* appearances.

The chief anatomical peculiarities of the infarction in the lungs remain then but poorly explained, for any distant cause of engorgement, such as mitral obstruction, should affect the entire lung equally, and therefore cannot adequately account for any of the constant characteristics of the lesion, which I shall now recapitulate :

- α. Sharp demarcation from surrounding tissue.
- β. Plurality of the centres of engorgement.
- γ. Their scattered distribution in the lungs.
- δ. Their regular conical shape.
- ε. The dense thrombi in vessels.

The key to these difficulties was first found by Virchow, who, by his exhaustive researches on embolism, threw light on so many otherwise inexplicable pathological processes, that they may be considered to have created a new era in pathology.

He found by experiment that solid particles of various kinds, when introduced into the circulation, acting as artificial emboli, were carried along with the blood-stream till they reached a vessel too small for their reception; here they became impacted and occluded the vessel. If they are introduced into a vein, they of course pass by the right heart into the lungs, where they are arrested; and if introduced into an artery, they are stopped on their way to some part of the general capillaries. That the presence of free fibrinous masses, or emboli, is common in the human subject, he also proved, and explained how they arise by the projection of a growing end of a thrombus from a tributary into a larger vein, where it is broken off by the passing stream of blood. The impaction of such an embolus causes changes in the part supplied by the plugged artery, the intensity of which depends upon many circumstances, the most important of which are—

1st. The freedom of anastomosis enjoyed by the distal part of the plugged artery, there being a certain number of organs whose terminal branches have no anastomotic connexions—namely, the lungs, spleen, kidneys, and brain.

2nd. The properties of the substance forming the embolus,

which produces various results according as it is more or less mechanically or chemically irritating.

3rd. The efficiency of the valves in the veins of the heart.

The varieties in the vascular arrangement in different organs is so great, and the emboli may vary so immensely in size and properties, that we cannot be surprised at a long list of results which may follow the process. The simplest of these occurs where there is a perfect system of anastomoses, such as the vessels of the limbs, where pain and passing *œdema* are the only effects; when the substance forming the embolus is of an irritating nature it sets up local *inflammation*; or, if the plug be very large, *gangrene* may follow—the most common result of a simple embolus being, however, an *infarction*, which commences as congestion, and the part soon becomes dry, dense, and fibrinous. In many cases and situations these infarctions become so intensely engorged that they acquire the name *Hæmorrhagic*, when they remain as black masses such as those I have described as occurring in the lungs. In other cases the hæmorrhagic stage passes on rapidly to suppuration, when we have the so-called *metastatic abscess*. In other cases, again, the plugging of the vessel may be followed by *atrophy* of the part supplied.

Virchow's observations were confirmed by a host of experimenters on the Continent, and there now no longer exists a shadow of doubt that the plugging of a vessel causes certain changes which are capable of explaining all the lesions attributed to them; and since Cohnheim's recent work on the subject,* the greatest sceptic must admit these views, as that pathologist showed it was easy, with the aid of the microscope, to watch, step by step, the process of infarction taking place in the transparent tissues of a frog, where he found the changes following the sticking of a wax embolus to be divisible into the following stages:—

- α. Temporary dilatation of the vessels.
- β. Peculiar oscillating movements in the stream of blood, with a tendency back towards the embolus, which produces crowding.
- γ. *Œdema* of the tissue and emigration of the white corpuscles.
- δ. Hæmorrhage from the capillaries.
- ε. Absolute stand-still of blood.

All his observations were confirmatory of Virchow's explanation

of the process, and throw new light on the immediate cause of the hæmorrhage—a point which Virchow does not at all satisfactorily explain.

The explanation usually adopted was that given by Ludwig. He believed that the blood corpuscles, which had free access to the distal end of the plugged vessel through the neighbouring capillaries, became lodged there, and so occluded some of the capillaries, while others formed a kind of blind end to the collateral arteries. In the latter set of capillaries the tension rose to that of the vessels leading to them, and this their delicate structure was unable to bear, and accordingly allowed the escape of blood. This view, which hardly bears critical physiological examination, seems rendered more improbable by Cohnheim's observation that the hæmorrhage occurs before the coagulation of the blood in the vessels; and his experiments led him to adopt another view—namely, that the constant renewal of the blood in the vessels was necessary to sustain the perfect function of their wall, and he concluded that capillaries lost their function—*i.e.*, their power of governing the retention of the blood—when deprived of a constant supply of fresh blood. However, he was unable to detect any corresponding structural change as evidence of such a process of starvation. According, then, to Cohnheim, the order of events would be:—

1. Retardation of the blood-stream.
2. Œdema and emigration of white corpuscles.
3. Increasing stasis from pressure of œdema, &c.
4. Starvation of blood-vessels—first, the capillaries; then veins; and, lastly, arteries.
5. Impairment of their function, causing inability to retain the blood.
6. Hæmorrhage.

If we adopt, then, the embolic process as the cause of the infarction of the lung which accompanies the hæmorrhage in heart disease, we must find a constant and ready source of origin for the emboli. For this, in the majority of cases of dilatation, we have not far to go, as in the right auricular appendix, or among the trabeculæ of the right ventricle, there is generally an abundant supply of small coagula, formed where the movement of the blood is most retarded, as it has now been ascertained that just as the wall of the vessels must have a fresh supply of blood to retain their perfect life, so the blood must be kept repeatedly in contact with the healthy wall of a vessel to prevent its coagulation. These cardiac thrombi

sometimes appear pedunculated, when they are called *polypi*, which, if once detached, must be carried into the branches of the pulmonary artery, where they set up the changes I have attempted to describe.

In a case, then, of disease of the heart which terminates fatally by pulmonary infarction, the probable chronological sequence of events may be thus enumerated:—

1. Prolonged impediment to the pulmonary circulation, frequently caused by valvular disease of the left side of the heart.

2. A certain amount of injury to the pulmonary vessels, caused by the constant obstacle to the flow of blood.

3. Dilatation and hypertrophy of the right heart, which always follows the persistent impediment to the pulmonary circulation.

4. Coagulation of the blood, which commonly occurs on the surface of the ventricle or in the auricular appendix.

5. The detachment of a portion of such a fibrinous clot.

6. An embolus is thus formed which sticks in a branch of the pulmonary artery.

7. *Hæmorrhagic infarction* and bleeding into the air passages, in the manner already described.

These variations and hæmorrhagic tendency depend, I believe, on (a.) disease of the pulmonary vessels, and (b.) hypertrophy of the right side of the heart, circumstances which cannot be imitated by experiment, and hence Virchow could never produce typical pulmonary apoplexy in the lower animals. Thus, besides the properties of the embolus, the anastomoses of the artery, and the supply of valves in the veins of the part, there are two conditions to which experimental pathologists seem not to have ascribed sufficient importance, for they doubtless materially influence human pathology.

If we examine carefully the morbid appearances in various cases of pulmonary infarction, we find differences in the anatomical characters and results, which can hardly be explained by the circumstances which govern experimental infarction. Thus, in some cases depending on cardiac disease, the hæmorrhage is very profuse, and even the tissue ruptured; while in others, no doubt rarer cases, the bleeding is comparatively slight, and the infarction dries up, evidently with a tendency to form a mere fibrinous induration.

If we analyse the various events in the development of dilatation of the right side of the heart, we find that the injurious influences

which generally commence at the left side must pass to the right by means of the pulmonary circulation, and the vessels themselves must surely become more or less deteriorated or diseased by the transmission of such mechanical impediment; and as I have constantly found material changes in the walls of the pulmonary vessels, in cases where there has been copious bleeding, I believe that deterioration of the walls of the pulmonary vessels is a very important factor in its production.

The second important circumstance influencing the amount of hæmorrhage is the strength of the right ventricle, which is usually more or less increased by the same cause which produces the dilatation; though the hypertrophy is often too slight to attract special attention, it becomes a most active agent in causing bleeding where the vessels are diseased, and the tension within them increased by a portion of the usual blood channels being occluded.* I believe that either, or both, disease of the pulmonary vessels and hypertrophy of the right ventricle, are essential to the production of those profuse bleedings which so often prove fatal in heart affections.

The conclusions we may be allowed to draw from the foregoing remarks can be thus briefly recapitulated:—

That the commonest cause of hæmoptysis in cardiac disease is pulmonary infarction produced by embolism.

The occlusion of a vessel by an embolus fully explains the anatomical characters of the infarction and the occurrence of hæmorrhage.

That the origin of the embolus may usually be traced to the cavity of the right side of the heart, where fibrinous clots are frequently formed *intra vitam*.

That the alteration in the capacity and strength of the right side of the heart is commonly the immediate cause of the embolism.

That disease of the smaller branches of the pulmonary artery is commonly associated with the change in the right side of the heart, and is an important agent in regulating the amount of the hæmorrhage which takes place.

* Several specimens of infarctions were shown, illustrating the anatomical characters of the affection. Also the hearts of two patients who had died of rapid pulmonary hæmorrhage. In both of these, the right cavities were dilated and hypertrophied in a most unusual degree. The pulmonary arteries showed disease of their coats in the larger branches.

In one of the hearts there was no sign whatever of disease on either the mitral or aortic valves, and the orifices were normal in size; the left cavities were enlarged, but slightly so when compared with those on the right side.

That bleeding from the bronchial mucous membrane cannot produce, or even simulate, true hæmorrhagic infarction.

That valvular disease of the left side of the heart is a very common starting point of all these pathological changes, but that such disease is by no means an invariable concomitant of pulmonary apoplexy.

ART. VIII.—*Dilatation of the Stomach.** By ARTHUR WYNNE FOOT, M.D.; Junior Physician to the Meath Hospital.

THE following case is one of great dilatation of the stomach, consequent upon narrowing of the pylorus, the result of an ulcer situated in that neighbourhood. It was characterised by periodic vomitings of large quantities of acid, fermenting liquid, rich in sarcinæ. The patient derived much relief from the washing-out of the stomach with alkalisied water, and died apparently from an attack of sub-acute peritonitis, for which, however, there was no obvious cause, and which did not appear to be in any way attributable to the use of the stomach-tube.

The subject was a country boy, aged nineteen, of the labouring class, who was admitted to the Meath Hospital under my care, 28th Oct., 1874, complaining of "a windy swelling" rising in his abdomen, and at intervals ending with a copious vomiting of liquid so sour as to injure his teeth, also of heart-burn, "a drunkenness in his head" (*vertigo dyspeptica*), and frontal pain. He further mentioned that he felt "a working and boiling" in his stomach; that this sensation and his almost constant heart-burn were relieved for the time by vomiting; that the vomited matters hissed and frizzled in the basin; that he felt his stomach as if it were a bag; that it "joggled" while he walked, so that he used a belt to support it. His appetite was very defective; his bowels generally acted once a week, and on one occasion not for twelve days. He suffered greatly from flatulence (gastric); the wind always escaped upwards—never downwards. His teeth were perpetually "on edge" from the sourness of the periodic vomitings. Such were the symptoms he complained of on admission.

On personal examination he was found to be deficient in flesh and strength. He presented the *facies dyspeptica*, a dull, spiritless

* Read before the Medical Society of the College of Physicians, February 10, 1875. [For the discussion on this Paper, see page 245].

cast of features, with everted upper lip, open mouth, showing his teeth when he spoke, and a pinched, chilly expression of face. The position of his stomach varied in the horizontal and erect positions. As he lay in bed the stomach seemed to lie flattened out over the whole abdomen, which gave the stomach note on percussion from the left nipple to either iliac fossa; percussion, moreover, excited muscular movements in the stomach quite visible and palpable; he was well aware of this habit of his stomach of "gathering up into a ball." The ordinary tone of the precordial region was replaced by a tympanitic note; the hepatic dulness was encroached upon, but not materially diminished. When he stood up, the belly swagged forwards, the stomach and its fluid contents making a protuberance below the umbilicus, which, from the fluctuation and dulness, simulated ascites. It was ascertained by percussion that the spleen was dragged down by the baggy stomach when he was in the erect position; by auscultating the abdomen, as he drank, while standing up, the liquid was plainly heard meeting the fluid in the stomach at a point two inches below the umbilicus. He was sensible of the undulations of the contents of the stomach when lateral percussion was made in the erect position; and when, in the horizontal position, the flat hand was applied smartly over the pubis, he felt the shock communicated to the liquid under the left nipple. "Hippocratic fluctuation," the splashing sound of a mixture of gas and liquid, was elicited by this manœuvre. There was no solid tumour in the abdomen. He had a constant sense of weight and fulness in the belly, except after vomiting; he wore a belt to support the weight when up, and when in bed he adopted a peculiar position, in which he even slept—namely, he sat up with the left leg extended, the right thigh flexed, so that the right knee was pressed up against the abdomen; the clasped hands, placed between the right thigh and belly, were kept pressed against the stomach to support it. He said that in this position he was less annoyed by the rising of the "sour, scalding stuff," than when he lay down, and was freer from a burning pain which passed from the ensiform cartilage up his neck, accompanied with gulps of acid liquid. When he did lie down, it was on his left side. As he complained much of the soreness of his teeth—that is, of their being "on edge," for he did not know what toothache is—his mouth was examined, and he was found to possess a complete set of unusually white teeth—not one of them, thirty-two in number, exhibiting a trace of caries, but the cutting edges

of all the incisors were worn off half way to the gums, as if they had been filed away; he said this was the result of the sour vomitings, and had occurred since they came on. While he was in hospital he generally turned his head to the right side to discharge the acid fluid which rose to his mouth, as the basins were kept at that side of his bed, and he said that the teeth of the right side of the mouth suffered much more from being "on edge" than those of the left side.

There was no difficulty in making the diagnosis of dilatation of the stomach, but as the prognosis depended very much upon the *cause* of the dilatation, it was necessary to arrive at the etiology of the disease. Two circumstances in the previous history threw light upon this. In April, 1872, eighteen months prior to admission, he received a hurt in wrestling from a man kneeling upon "his wind," the locus of which he referred to a point in the right hypochondrium corresponding to the region of the pylorus. He had continual pain in that region for several months after the injury. In October, 1872, six months after the receipt of the injury, he was suddenly seized with a profuse vomiting of blood, supposed to have been induced by a strain while ploughing; he estimated the loss of blood at "a gallon;" at all events it was very copious, as he "fainted for sixteen hours," and nearly died from its effects. From that hæmatemesis he dated his gastric symptoms. His lungs being healthy I inferred that by the hurt received in wrestling, the coats of the stomach, near the pylorus, had been injured; that ulceration had ensued, of which the copious hæmatemesis, six months subsequently, was a result, and that the cicatrisation or thickening about this ulcer, had, in the twelve months since then, narrowed the pylorus so as to prevent the stomach emptying itself in the ordinary way. Accordingly, an unfavourable prognosis was at once made, but treatment was directed, on the one hand, towards bracing up the muscular coat of the relaxed stomach, in the hopes of making its contractions sufficiently energetic to overcome the pyloric obstruction; and, on the other hand, towards rectifying the fermentative condition which the chronic gastric catarrh had produced. The former indication was attempted by bandaging the stomach, the use of hypodermic injections of liquor strychniæ, and by faradisation, and afterwards galvanisation of the stomach. The subcutaneous injections of strychnia, $\frac{1}{4}$ th of a grain in each, were made between the umbilicus and epigastrium, but the needle pro-

duced small pustules, probably from irritability of the tissues owing to his state of defective nutrition, and they were soon abandoned; he used to feel the stomach "harden up" after their use; in their stead he was given 15 m. tinct. nuc. vom., in 1 oz. inf. quassiae, three times a-day. Faradisation was effected with the primary current of Stöhrer's battery, one moistened pole at the umbilicus, the other applied along the spine. The current from 30 cells of Leclanché's battery was afterwards used, and during its employment a muscular tumour, produced by the contraction of the stomach, was quite evident; this tumour originated in the left hypochondrium, and passed diagonally across the abdomen towards the right iliac fossa. He derived some relief from the support of a broad abdominal bandage.

As he always felt relieved by vomiting, he was, the day after admission, given an emetic (sulph. zn. gr. xx., vin. ipec. 3ij., aq. ad. 3ij.); this acted in about 20 minutes (with the assistance of his finger in the pharynx, for he was accustomed to unload his stomach by inducing vomiting in this way), and produced a basinful of intensely acid liquid, which was soon covered with a thick brown scum. The character of the vomited matters remained constant until a short time before his death—that is, they were always copious, liquid, extremely acid, turning blue litmus paper scarlet, giving off a smell of stale beer; the surface of the liquid was habitually covered with a brown scum, about half an inch thick, which gradually disappeared in the course of 24 hours. This scum was precisely like that which is seen collected among bushes overhanging a river in flood. There was much slimy mucus underlying the liquid, mixed with a greyish gruel-like sediment, so that the basins exhibited three strata, the scum uppermost, the liquid and the slimy sediment at the bottom. Microscopic examination of the scum showed abundance of sarcinæ, torulæ, and various other fungoid spores, in addition to the ordinary histological appearances of vomit. Observations were made as to the inflammability of the gases given off by the stomach and vomited matters, but there was no evidence of their capacity of ignition. The discharges from the stomach occurred at intervals of from 24 hours to 4 days, took place suddenly and without nausea, were attended with marked temporary relief, and, as has been observed in similar cases, appeared to exceed considerably the ingesta. Before his admission he had often recognised things eaten several days previously when they were returned partially digested. Sulphurous acid and

hyposulphite of soda appeared to have no modifying effect upon the character of the vomit; the same may be said of carbolic acid, which he took according to a formula of Dr. Alex. Keith (℞. acid. carbol. ʒj., ac. acet. ʒj., tr. opii ʒj., spt. chlorof. ʒj., aq. ad. ʒviij., ʒj., t. d.), nor did creasote, so highly approved of by Murchison for sarcinous vomiting, produce any marked change, although in addition to mixt. creasoti, ʒi. t. d., he had creasoti ij. m. in pills of Chian turpentine three times a-day. The flatulence, which was very distressing, was more relieved by magnesia, 20 grs. ter die, than by any other form of medicine.

Soon after his admission I began to use the stomach-pump, pumping in tepid water in which bicarbonate of soda was dissolved. It was, at first, not necessary to pump it out, as he vomited freely with the tube in the œsophagus, discharging at the same time large quantities of ropy mucus. The entire tube, which was 30 inches in length, passed down, indicating that the fundus of the stomach was considerably below the umbilicus. Two large jugs of water, holding an ounce of soda in solution, were usually pumped into him; this washing was made every second or third day; he highly approved of it, and often passed the tube himself. By thus anticipating the time of the spontaneous vomiting he was saved much suffering from heart-burn, and uneasiness from the "working and boiling" sensations which preceded it. Indications were soon afforded that part, at least, of the stomach was in a state of paralysis, and that it was emptied chiefly by the action of the abdominal muscles; because percussion after the use of the stomach-pump showed the size of the stomach to be little altered, and that the liquid contents had been replaced by air. An intelligent patient in the bed next him observed to me that more wind came off his stomach on the days the stomach was washed, and after the operation, than on other days, or before its use. The boy also remarked that latterly the second jug of water was retained in the stomach until he drank something, when he rejected both the drink and the water. It was noticed that the contraction and "hardening" of the stomach, induced by striking the parietes of the abdomen, was generally at the right side of the middle line, whence it was inferred that the pyloric half of the stomach was in a state of active hypertrophy, while the cardiac half was in a condition of paralytic distension; this was found to be the case after death, a strong hour-glass constriction separating the two regions. It now became necessary to pump out the remainder of the contents of the

stomach, after vomiting had removed a certain amount of the fluid introduced; this was done on sixteen occasions. Whenever he felt any tendency of the tube to nip or pinch the stomach, owing to the mucous membrane being applied against the orifices of the tube, he used partially withdraw it himself. When the orifice of the stomach tube is not terminal but lateral, the fear of sucking some mucous membrane into the opening of the tube is almost without foundation. It happened once to Dr. Schliep,* in about six hundred applications of the pump (in cases of dilatation of the stomach), to bring up a small piece of the membrane, when the patient himself pulled out the tube somewhat suddenly after the finishing of the operation, but no bad consequences followed. As to his diet, as milk agreed with him, he was allowed two quarts of it, roast meat, a glass of whiskey, and toasted bread; he had discovered for himself that bread agreed better with him when well toasted than in any other condition. The use of the stomach-pump was, on two occasions, intermitted for a week in consequence of "bilious attacks," which appeared due to catarrhal irritation of the bile ducts, and were characterised by feverishness, pain in the right hypochondrium, and heat in the stomach; these symptoms were relieved by ice internally, and hot poultices externally. He sank under a third attack of this nature, which lasted a week, and in which the vomiting became so constant as to preclude the administration of any food by the mouth; he was then supported with enemata of beef-tea and whiskey, but became rapidly emaciated. The character of the vomited matters at this period became completely changed from their barmy appearance, and were replaced by bilious liquid; he suffered much before his death from incessant and uncontrollable hiccough.

When the abdomen was opened the cavity appeared almost wholly occupied by the stomach, which, like a large bag-pipe, stretched from side to side, and reached nearly to the pubis; water could not be made to pass, except in drops, from the stomach into the duodenum, even under considerable pressure, but could be made to pass, though with great difficulty and slowness, in the reverse direction, from the duodenum into the stomach. The cardiac end of the stomach was particularly loose and baggy, the pyloric end notably hypertrophied; the pylorus was so contracted as to only admit of a very fine glass rod being *forced* through it; the antrum pylori was occupied by an ulcer with

* Brit. Med. Jour., 7th Dec., 1872, p. 642.

reddish surface, round, depressed, the size of a florin; a gland, the size and shape of a filbert, appeared on the outside of the stomach, close to the seat of the ulcer. The lining membrane of the stomach was thickly coated with a very tenacious mucus; the organ externally appeared much more vascular than usual, the veins being numerous, large, and tortuous. The liver and spleen appeared normal. There were appearances of peritonitis in flaky lymph upon the intestines; there was no fluid in the peritoneal cavity. There were no indications of irritation of the interior of the stomach from the use of the stomach-pump tube, which had been introduced twenty-six times.

Among the *clinical observations* which this case suggested were the following:—That dilatation of the stomach, as a morbid and serious condition, is distinguished from its temporary dilatation by food or gas by its speedy return, in the latter case, to its natural size when emptied, whereas in the former both percussion and *ballottement* show, as in this instance, that it does not do so; that it is most usually symptomatic of obstructed pylorus, and so most frequently observed between the ages of thirty and sixty, when the causes of obstruction of the pylorus are most prevalent, so that its occurrence at the age of nineteen is exceptional. The diagnosis of the fluctuating protuberance made by the baggy stomach in the erect position from ascites, though it was not difficult in this case, may yet become so when the stomach is adherent to the abdominal wall. Even where this was not the case, the operation of tapping has been performed upon a dilated stomach in mistake for ascites, as in the case reported by Chaussier of an individual with œdematous limbs and distended belly, who was tapped in the abdomen, there came out through the canula gas, and some pints of a mucous, frothy, blackish liquid; the patient at first appeared relieved, but died in the course of the night following the operation; there was no ascites, but a prodigiously dilated stomach was found, pierced by the trocar, containing liquid similar to what had escaped, and with a scirrhus pylorus.* The rebellion of the stomach to anti-zymotic remedies, such as creasote, carbolic acid, and the hypo-sulphites, as evidenced by the persistence of the fermenting vomit, indicated that there was more than a mucous catarrh of the stomach to deal with, and that the alimentary substances were unable to leave the stomach. It was observed in this, as in similar cases, that the distance between the cardiac and

* Cruveilhier, *Path. Anat.* Tome II., p. 856. 1852.

pyloric orifices was not much altered—that is, that the expansion of the stomach was not at the expense of the lesser curvature, but at that of the greater, which, insinuating itself between the layers of the great omentum, descended to the pubis, thereby increasing the difficulty of food, which had fallen into such a gulf, reaching the comparatively fixed pylorus. The great curvature from œsophagus to pylorus measured 31 inches, the lesser curvature $6\frac{1}{2}$. Perhaps the greatest dilatation of the stomach on record is the case by Jodon,^a in which the length of the stomach is given as $4\frac{1}{2}$ feet; it occurred in a woman forty-eight years of age, who, from the gradual increase of her abdomen, thought herself pregnant, and when her time had passed, a physician whom she consulted thought her dropsical. She died after a seven-days' illness, marked by fever, thirst, and great dyspnœa. It was impossible to coffin her, from the great size of her belly; and, at the suggestion of her parents, an opening was made in the abdomen, which gave exit to a quantity of liquid estimated at ninety pints. The aperture was then plugged, and a more methodical examination instituted, when it was ascertained that the anterior wall of the stomach was intimately adherent to the abdominal parietes; that the collection of fluid was in the enormously dilated stomach, which was sown with hydatids, one of which—larger than the rest—occupied and obstructed the pyloric orifice.

The stomach-pump was employed in the above case only as a palliative remedy, an unfavourable prognosis having been made from the very first. It has been laid down by Professor Kussmaul of Freiburg, the originator of this therapeutic use of the stomach-pump, that relief only, but no cure, can be expected—1, in cases of cancerous stricture of the pylorus; 2, if the pylorus be very considerably contracted by a cicatrix; 3, if with even a moderate stricture the walls of the stomach have, in consequence of the chronic gastritis, undergone a permanent degeneration.^b That substantial relief may be afforded by the use of the stomach-pump is proved by the history of two cases of dilatation of the stomach thus treated by Dr. Affleck in Scotland, as both patients provided themselves with stomach-pumps, on their dismissal from hospital, to carry on the treatment for themselves.^c

The case which I have related was looked on as a hopeless one

^a Cruv. op. cit., p. 852.

^b Deutsches Archiv. für Klinische Medicin. Vol. VI., p. 455.

^c Brit. Med. Jour., 18th May, 1872, p. 539.

from the beginning, but I was not quite prepared for so early a termination of it; and yet, looking at the condition such cases are reduced to, it is not to be wondered at that their powers of vital resistance are very slight; and I find, also, that such cases of dilatation of the stomach, from obstructed pylorus, generally in the end succumb rapidly to a short attack of illness.

ART. IX.—*On a Case of Cirrhosis or Fibroid Infiltration of the Stomach.* By J. J. CHARLES, M.A., M.D.; Demonstrator of Anatomy, Queen's College, Belfast; and late Assistant Lecturer on Comparative Anatomy, Edinburgh University.

IN November, 1873, my attention was directed to an extraordinarily small stomach in an aged male subject in the Queen's College Anatomical Rooms. The whole body was much emaciated, and the heart very small, being considerably smaller than the closed fist of the body. The intestines were very pale, and only a little more than half the normal size, and the villi in their interior were so much atrophied as to be hardly visible. The liver and other abdominal organs were small, but healthy, and the lungs normal.

The stomach maintained most of its ordinary relations to surrounding parts; but as it lay somewhat more vertically than usual, it was confined almost entirely to the left hypochondriac region. After its removal from the body with a portion of the duodenum, it presented the following characters:—In appearance it closely approached its primitive condition of a tube, with a pouch on one side. It could scarcely be said to possess a "fundus," the splenic end projecting little, if at all, to the left of the œsophagus; and the curvatures were but slightly marked, both borders being straighter than usual. The pyloric extremity was much thicker than the rest of the stomach, and for an inch and three-quarters from the pylorus it was of nearly uniform diameter throughout, resembling in form and size a portion of hypertrophied intestinal tube.* There was no apparent difference in size between the pyloric end of the stomach and the duodenum. The principal dimensions of the stomach, when slightly stretched, were as follows:—

A B.—Greatest length from most prominent point of splenic end to pylorus, six inches;

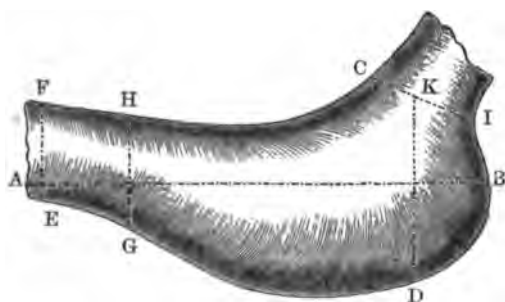
* From this peculiarity in its shape, Professor Macalister, of Dublin, when I showed him the stomach, observed the strong resemblance it had to the stomach of the *myrmecophaga*.

C I.—Diameter of cardiac orifice, one inch and a-half;

K D—Greatest depth from cardiac orifice to great curvature, two inches and three-quarters;

E F.—Diameter at pylorus, a little more than one inch and a quarter;

G H.—Diameter, one inch and three-quarters to left of pylorus--about one inch and five-eighths.



On making an incision parallel with, and near to the small curvature, all the coats were found to be thickened to a greater or less extent, more especially at the pyloric extremity, where the section had almost the colour and consistence of fibro-cartilage, and was twice as thick as at the cardiac orifice. The serous coat was of an opaque white colour, and presented no marks of ulceration. The muscular coat was much hypertrophied. The mucous membrane was pale and thick, and thrown into longitudinal rugæ along the great curvature. On the anterior wall, close to the small curvature, and two inches and a-half from the pylorus, was an ulcer of the size and shape of a four-penny piece, which involved only the mucous and submucous coats; its edges were sharp cut and not raised, and the surface smooth and of a greyish colour.

Microscopical Appearances.—The microscopical examination was made by Dr. T. Cranstoun Charles, in the Brown Institution, London, under the direction of Dr. Klein.

The stomach was left in methylated spirit for several weeks, and a number of pieces were then cut from it at different parts, and hardened in absolute alcohol. These were next embedded in wax, and then vertical sections made in the usual way. After having been stained in hæmatoxylin solution, and immersed in oil of cloves, the sections were mounted in Canada balsam.*

All the coats were observed to be more or less hypertrophied,

* See Dr. Klein's paper in Quar. Jour. of Microscopical Science. Vol. XIII., p. 377.

but the greatest increase was in the *submucosa*. Here the thickening was due to a deposit, or new growth, of an imperfectly fibrillated tissue, resembling connective tissue in an early stage of development. Towards the *mucosa* the growth consisted entirely of lymphoid corpuscles, which replaced in great part the *muscularis mucosa*; but towards the *mucosa* the tissue became fibrillated like imperfectly developed fibrous tissue, the fibrillation being best marked close to the muscular coat.

The *mucosa* was slightly thickened, and the *mucosa* more so, but little or no increase could be detected in the fibrous element of the latter, while the lymphatic spaces were observed to be greatly increased in number and in capacity.

The blood-vessels were few in number, and the elastic tissue was nowhere increased in quantity.

History.—For the history of the case I am indebted to the medical practitioner in attendance. I give merely a slight sketch of it, as the symptoms and treatment were in no way peculiar:—

August 27, 1873.—W. M., aged seventy-three, presented himself to-day, suffering from occasional vomiting, pain in the epigastric region, and some eructations, with considerable tenderness on pressure over the epigastrium. No blood observed in the vomited matters. The disease was diagnosed to be ulcer of the stomach. Accordingly, trisnitrate of bismuth and compd. kino powder were prescribed, and a sinapism ordered to the epigastrium. He was to take daily a pint of milk mixed with lime water.

September 8.—As the vomiting had been very frequent, emplastrum lyttæ was applied to the epigastrium, but had to be repeated every other day for eight days before vesication could be produced.

September 19.—Since the blister rose yesterday, the patient commenced to improve; and from this date till October 20 he continued better—indeed, he recovered so far as to be nearly free from pain and vomiting, except on one or two days (October 10), when these symptoms returned.

October 20.—The vomiting, with occasional diarrhœa, again supervened, and continued with a few intermissions till his death. Remedies seemed to have little effect in checking the symptoms, and his body became more and more emaciated until November 7th, when he died from exhaustion.

Remarks.—There can be little doubt the above case is an example of that rare disease which has been variously designated

as cirrhosis, plastic linitis (Brinton), fibroid infiltration (H. Jones), and sclerosis (Snellen). In it, as in such cases, "there is evidently an exudation occupying the areolar tissue of the stomach, and gradually undergoing a change, in which its development into a low grade of fibrous tissue (like that of a fibroid tumour) is accompanied by a constant decrease of its bulk and increase of its density. The contraction and hardening thus brought about not only seriously damage the function of an organ to which mobility is essential, but they obstruct its circulation, and probably its innervation also; and they inaugurate grave lesions of its mucous and serous coats."^a "While the loss by ulceration of a variable extent of the whole thickness of this (mucous) coat is so frequent and dangerous a result of this kind, as really to constitute what might almost be called a termination or event of the malady."^b

According to this view, then, the ulcer is to be considered a consequence of the cirrhosis, and not the primary disease, as some might be inclined to imagine. Besides, we do not find the stomach so much contracted, and its coats infiltrated for so great an extent, in a case of simple ulcer.

Dr. Habershon relates the particulars of a case in which the stomach was very much contracted (six inches by two), and presented internally an ulcer and a villous growth. He believes the changes in the stomach were produced "by inflammation of the mucous and submucous tissues, leading to very slow ulceration in one part; in another to the development of contractile tissue in the substance of the membrane, and producing contraction of the whole organ."^c This case bears a close resemblance in many respects to the one I have described above; and I think it might with good reason be regarded as an instance of cirrhosis, though Dr. Habershon does not appear to consider it as such.

Cruveilhier gives a plate^d of a small stomach with considerable thickening of its pyloric half, due, in his opinion, to hypertrophy of the fibrous and muscular tissues. Perhaps this case, too, would now be looked upon as an example of cirrhosis. In another plate^e he delineates a very much contracted stomach, which was taken from a patient who had died from cholera.

^a Brinton on Diseases of Stomach, p. 271. 1864. See also Rindfleisch's Pathological Histology. Syden. Society, pp. 329 and 416. 1872.

^b Brinton, *op. cit.*, p. 268.

^c Diseases of the Alimentary Canal, p. 92. 1857.

^d Anatomie Patholog. du Corps Humain, 27 livr., Pl. I.

^e *Op. cit.*, 14 livr., Pl. I.

With regard to the difficulty of causing vesication in the case above described, I may add that when exhibiting the stomach before the Ulster Medical Society, in 1874, one of the members remarked that he had on several occasions encountered the same difficulty in producing vesication over a subjacent intensely inflamed organ; and that he was generally unable to do so until the inflammation had somewhat subsided, so as to be a source of less irritation internally than the blister was externally. It has been suggested to me, since then, that the cause of the blister not producing any effect in this case might be ascribed to the fact that the system was at the time in too weak a condition to respond to its irritation.

ART. X.—*An Interesting Case of Neurosis.* By JAMES MARTIN, F.R.C.S.I.

I WAS called, six weeks ago, to see a kitchen-maid in a nobleman's family—a tall, well-made girl, of dark complexion and dark-brown eyes. She stated that she never remembers having been ill. Her father, a butler, was strong, but gouty; her mother had been very delicate, but her sister healthy and strong. About six weeks ago she felt poorly, but could not define in what way. After two or three days a sharp pain set in, darting from the ensiform cartilage to the sixth and seventh dorsal vertebræ, which made her feel very weak, and disabled her from work; but what alarmed her most was that for four or five days the skin over the sternum had become deeply discolored. On visiting her she stated that she felt weak and languid, and had a pain shooting, as above stated, through her chest; had lost appetite, and slept badly. I found the pulse 86, small and compressible; tongue loaded at back; the lower eye-lids very dark; the heart's action feeble; great tenderness on percussion over the sixth and seventh vertebræ; a general discoloration of the skin, made more evident by white patches on the arms and elsewhere. Over the sternum was a triangular patch as brown as the nipple in advanced pregnancy, about four inches in length, two inches at the base, the apex below at the point of the ensiform cartilage; this she was positive never existed until after the pain set in, and that it gradually increased in size for five days. She menstruated regularly; her bowels costive; urine pale and abundant.

Looking on it as a case of neurosis, I regulated the digestion by mild aperients and vegetable bitters, and then gave a mixture of Tr. digitalis, nux vomicæ, and perchloride of iron; and after a steady course of six weeks' duration, she now feels quite well; has gained weight, and is quite equal to her work. The dark patch over the sternum has quite disappeared, but the general discoloration of skin and white patches continue. She cannot give any account as to how long this state has existed, or whether it has ever been more marked.

I venture no opinion as to whether this girl labours under *morbus Addisonii* or not. The discolored state of the skin is very much the same, but the health she has enjoyed, and her rapid amendment, seem inconsistent with so dangerous an organic lesion.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lectures on Pathological Anatomy. By SAMUEL WILKS, M.D., F.R.S., and WALTER MOXON, M.D. Second Edition. London: Churchill. 1875. Pp. 672. Seven Plates.

Manual of Pathological Anatomy. By C. HANDFIELD JONES, M.B., F.R.S., and EDWARD H. SIEVEKING, M.D. Second Edition. Revised, enlarged, and edited by JOSEPH FRANK PAYNE, M.B. London: Churchill. 1875. Pp. 871. 195 Engravings.

ENGLISH medical literature has been latterly remarkably poor in works on pathological anatomy. Indeed, until a very short time ago there was no book extant which could be considered as in any degree representing the modern condition of the science. Dr. Green's little manual supplied a very great want, and the favourable reception which it met with was due, not only to its own excellence, but also to the need which was felt for such a work.

The first edition of Dr. Wilks' lectures was published in 1859, and the first edition of the manual by Drs. Jones and Sieveking in 1854. Since these dates the science of pathology has undergone very great changes, and numerous omissions, additions, and alterations were required in order to bring the second editions up to the level of the knowledge of 1875. These changes have been made by the respective editors without altering the original scope and design of the works, which differ somewhat from each other.

Dr. Wilks' volume consists of lectures which were delivered to the students at Guy's Hospital. The style of the lecturer is preserved, and the arrangement of the matter differs from that generally adopted so as to agree with that employed in the classification of the specimens in the hospital museum, to which specimens frequent reference is made. There is much less reference to the work of other writers than is usually met with in so comprehensive a treatise. The views put forth and the statements made are

founded on the author's own observations, extending over many years; and whoever knows the field presented by the dead-house and museum of Guy's Hospital will readily acknowledge the sufficiency of the material at the author's disposal. The great value of the first edition of these lectures was proved by their rapid sale, and we can only say that the second edition has lost nothing by the alterations and additions made by Dr. Moxon—Dr. Wilks' successor in the chair of pathology.

Dr. Jones and Dr. Sieveking, in their manual, aim at laying before the reader a summary of the present condition of the science of pathological anatomy. They claim not so much to put forward original views and observations, as to present in a connected form the work done by the best pathologists of this and other countries. They have, however, examined, and, as far as possible, controlled the statements of others, and, for the most part, the drawings are original. Their arrangement of the matter is different to that found in Dr. Wilks' lectures—most notably in there being a long section at the beginning on general pathological anatomy, including morbid states of the blood, inflammation, textural changes, new formations, &c.—which subjects, with the exception of tumours, are not treated of separately by Dr. Wilks. A comparison of this edition with the first will show the very great changes which have been made. As the first edition represented well the condition of pathological science of 1854, so does the second that of 1875; and how great a revolution has been made in the science within these twenty years it is unnecessary for us to say. Dr. Payne, to whom the changes in the manual are entirely due, is entitled to very great praise for the way in which he has done his work; we believe the reader will find in his book all the information he can require on most points in pathological anatomy.

We propose to notice briefly the manner in which the authors treat some of the subjects of most modern interest, although the space at our disposal is quite inadequate to allow of our doing justice to either the authors or the subjects.

In Dr. Wilks' article on chronic rheumatic arthritis, we find some interesting remarks on erosion of articular cartilage. He says:—

“The behaviour of the articular cartilage in this disease has received the great share of attention, but we think its importance has been exaggerated. Thus it is said that the disease really consists of an irritative proliferation of the cells of the cartilage, producing a softened and overgrown state of its substance. The softness, then, it is said,

induces a wasting of the parts subjected to friction and pressure, while the soft overgrowth of cartilage sprouts at the edges of the joint where it is not repressed, and bulges out in the form of an irregular rim, which subsequently ossifies; so the bony masses around the joint are accounted for. But the worn and eroded state of cartilage found in chronic rheumatic arthritis is very far from being proper to that disease; indeed, erosion of cartilage is very frequent. It may be said that after the thirty-fifth or fortieth year it is usual to find such erosion, though chronic rheumatic arthritis is a comparatively rare disease. It might even be fairly suggested that the constant presence of this erosion of cartilage in rheumatic arthritis is only a coincidence from both disorders belonging to the years of declining life. But the histological changes are the same, whether the erosion is with or without the changes in the other parts, and it would, therefore, seem very reasonable to think that the implication of the other structures of the joint comes about after the destruction of cartilage has progressed beyond a certain limit so as to throw the wear and tear upon the bony tissue unprotected by cartilage, and so arouse in it and its neighbourhood sub-inflammatory reaction, thus constituting rheumatic arthritis in its more obvious form. Nevertheless, though this view is plausible, we think a large number of observations induces the belief that the erosion of cartilage does not lead so simply on to pronounced arthritis, but rather there is some other factor which is required to set up the inflammation, such as rheumatic fever, or a blow or sprain; and this latter factor is able to set up the rheumatic arthritis in the absence of degenerative erosion of cartilage, as is proved by the not very infrequent occurrence of that disease in the earlier years of life" (p. 76).

Dr. Wilks believes that the growths of new bone, which occur about the diseased articulations in chronic rheumatic arthritis, are not formed by anything bulging from the joint, but by an ossifying periostitis, in the same way as the osteophytes are formed about the ends of the bones in caries of their articular extremities, their denser structure being due to the greater slowness of the process in the rheumatic affection.

Softening of the Heart.—"The heart is found soft when its *rigor mortis* has passed off, as you know from your experience in the dissecting-room, where the heart is generally almost pulpy by the time you reach it in the usual course of dissection. You will, perhaps, remember that at the same period the spleen is very pulpy, and the vessels contain air-bubbles, while their interior is deep red or purple from imbibition of serum stained red through solution of the corpuscles in it. These are phenomena that accompany decomposition, as you well know. Now, in

some cases the softness of the heart is very remarkable when there is no sign of decomposition about the body generally. When this is the case you will find the spleen more or less pulpy, and the vessels deep red within, and containing air, just as in advancing decomposition. The course of the vessels under the skin is then marked by purple lines, and the trachea and bronchi are stained intensely red. We have known this change supervene in five hours after death, and that in winter time, when the weather was cold, and when no signs of decomposition appeared in other bodies kept for several days. By considering the kinds of cases in which this early decomposition of the blood and softness of the heart and spleen appear, you will find that it is more common in fevers, in persons who have died obscurely in two or three days after great surgical operations, or in persons who have died by coma in jaundice—that is, in short, when there are other reasons to believe that death was caused by changes in the blood. Speaking generally, we should say that marked softness of the heart is an index of changes in the blood, and goes with pulpy spleen, red endarterium, and at last air-bubbles in the vessels.

“Such pulpy softness of heart is of great importance among the signs of blood changes; so that when it supervenes very early after death, when the rest of the body is free from decomposition, there is great probability that the unusual condition of the blood thus declaring itself was in progress during life—we would not say to the extent of forming air within the vessels, but this may happen. We have had occasional evidence that emphysema from decomposition, *without any gangrene*, may be found commencing during life, and the same gaseous exhalation may continue after death. In these cases the softness of heart, &c., may come on exceedingly quickly, being complete in a few hours.

“But we have no knowledge of the state of softening of the heart to which some authors on the heart devote a chapter, ascribing special symptoms to it. Softness of the heart is important, but its importance is indirect as an evidence of febrile blood-changes—blood solution (*Blut-lösung*)” (p. 118).

As is known, Dr. H. Weber stated some time ago that, in so-called fatty degeneration of the heart, no increase of fat could be found on chemical examination of the diseased organ. Dr. Stevenson, however, has found 5 per cent. of fat, about twice the normal amount; and Krylow has also found a small but decided increase (4 per cent. in fresh, 20 per cent. in dried heart-muscle):—

“Nevertheless, the amount of increase is positively so slight as to make it probable that the granular appearance of the muscular fibres is due rather to a re-arrangement of their elements than to a large addition of fat, as was supposed before Dr. Weber’s researches were published” (p. 119).

Pigmentary degeneration of the heart-fibre, a change not met with in voluntary muscles, is, according to Dr. Wilks, not a sign of any primary or special disease of the heart, and is of common occurrence. Dr. Payne, however, considers it a rare condition. He quotes from manuscript notes of Virchow's lectures an hypothesis as to its nature—namely, that it depends originally upon a sort of fatty degeneration, fat being deposited, and then metamorphosed into the brown granules (p. 331).

Dr. Wilks thinks inflammation of the muscular substance of the heart accompanies endo or peri-carditis more frequently than is supposed. He holds this opinion because he has found anatomical evidence of myocarditis both in recent cases of inflammation of the membranes, and years after its occurrence. Also because he thinks we must assume some change in the muscular walls of the heart to account for—(1.) The enlargement which sometimes occurs after rheumatic peri or endo-carditis with little or no valvular disease. (2.) The occasional almost complete disappearance of the sounds and impulse of the heart; and (3.) The sudden death sometimes occurring in rheumatic fever (p. 120).

In speaking of phthisis, both authors admit the great variety in the nature of the morbid products found, in most cases, in the lungs. Dr. Wilks gives an admirable *résumé* of the opinions current as to the relationship of these products, and a most truthful description of the appearances met with in the different forms of phthisis, but does not commit himself to any theory. Dr. Payne complains that the term tubercle has been applied more loosely in regard to the lung than in the case of other organs. He thinks the name of tubercle has been given to the following objects:—

(1.) True grey miliary tubercles, such as are found in their most simple form in the serous membranes.

(2.) Peri-bronchial granulations, which consist each of a hard dark grey nodule, with a yellowish centre. This latter was usually looked on as the degenerating interior of a tubercle, until Virchow showed that it was really the cross section of a bronchial tube, stuffed with cheesy inflammatory matter, the hard grey periphery being formed of a small cell growth about the tube. The cells are very prone to degeneration and decay. In their earlier stage, Dr. Payne thinks these nodules are indistinguishable from true tubercle with some hypertrophy, and that the peri-bronchitic granulation might be described as peri-bronchitic tubercle. The disease in these cases is supposed to start from the mucous membrane of the bronchi, and

subsequently to invade their walls. Peri-bronchitis, unaccompanied by tubercle, rarely, if ever, occurs in the human lung, but is, according to Virchow, common in dogs.

(3.) Broncho-pneumonic granulations, the product of catarrhal broncho-pneumonia. Their distinction from true tubercle is fully given in the text.

(4.) Small syphilitic nodules.

(5.) Small fibroid granulations of uncertain origin, but whose history and the absence of accompanying changes forbid the supposition that they are tubercles.

The forms of phthisis which are recognised by Dr. Payne are—

(1.) *Catarrhal phthisis*, or caseous pneumonia, without tubercle. This form is rare, becoming almost always associated with formation of tubercle and fibroid change, and thus passing into one of the other forms.

(2.) *Mixed phthisis*, the most common form. In this the changes were formerly supposed to be entirely due to the formation and subsequent changes of tubercles. The inflammatory origin, however, long ago maintained by Addison, is now very extensively held, principally by German pathologists.

(3.) *Tubercular phthisis*, which, when it is chronic, cannot be distinguished from the second form, for when tubercles are once formed, they soon become associated with inflammatory change. Indeed, if the primarily tubercular origin of mixed phthisis be admitted, that and tubercular phthisis are identical.

(4.) *Fibroid phthisis*.—This, when it occurs in both lungs, is considered as ordinary phthisis, in which the fibroid change (a constant element in all forms), preponderates greatly over the tubercle formation and caseous inflammation. When it occurs in only one lung it is more properly looked on as chronic pneumonia.

With regard to abscess in the brain, Drs. Wilks and Moxon express very strongly their opinion that it never arises from ordinary inflammation, but is always the result of disease or injury of the bones of the skull, or else part of a general pyæmia.

“We have known abscess of the brain arise from ligature of a pile and from excision of the eye-ball. We have never ourselves met with an example of non-traumatic cerebral abscess where a careful search has not at last revealed the presence of primary suppuration in some other part of the body, and we should consider such a case to be an unsuccessful examination” (p. 232).

In the chapter on Diseases of the Supra-Renal Capsules, Dr. Wilks maintains his well-known views as to the pathology of Addison's disease. While he admits that the fatal symptoms of this disease are due to an influence exerted on the abdominal sympathetic, he thinks that the essential importance of the supra-renal capsules themselves has not been disproved by any of the arguments adduced against it. The fact that it is only one form of disease of the capsules—namely, scrofulous or tubercular—which causes the symptoms, while these do not occur in cases of cancer or amyloid degeneration, he meets by saying that very extensive cancer or lardaceous disease of the liver may occur without jaundice or ascites, while no one doubts the connexion between jaundice and liver disease in acute atrophy.

In noticing the occasional occurrence of small detached masses of supra-renal tissue, like the well-known spleniculi, he says:—

“This uncertainty in point of number of these organs refers interestingly to their embryotic development, which is by changes in the foetal connective tissue, and not by any formation from pre-existing organs, like the development of the liver and kidneys” (p. 495).

The chapters on Tumours, in the books under consideration, are short, but give a very excellent account of the structure of morbid growths. These chapters must have been almost entirely written by the respective editors. The classification adopted is in the main that of Virchow, whose great work—too long left uncompleted—will always furnish material for writers on onkology. Dr. Moxon's descriptions of the anatomy of tumours is illustrated by seven plates, containing numerous original drawings of the microscopic appearances described. Dr. Payne also gives several engravings taken from preparations of his own.

In speaking of the relative malignancy of different tumours, Dr. Payne says:—

“In concluding these general remarks, we may state, we think, the following position with some confidence—viz., that, starting from encephaloid as the representative of cancer, *par excellence*, we find the malignant character gradually declining as we pass through a series of formations, such as we have above described, until we come to those of whose innocent nature there is no question. The exact limit, we believe, at which malignancy is lost cannot be distinguished by any clear line, any more than in natural history we can separate absolutely animals from plants, or in chemistry we can make a positive distinction between metals and non-metallic elements.”

He then gives a Table, commencing with encephaloid, passing through scirrhus, epithelioma, sarcoma, myxoma, enchondroma, &c., down to the simple innocent histioid tumours generally. In another place he compares such a scale with those given of the electro-negative and electro-positive chemical elements, which cannot be arranged in two distinct Tables, but in a single ascending or descending series.

In concluding our notice of these books, we wish to recommend them most strongly to our readers. In either of them they will find a trustworthy guide to the modern state of the science of pathological anatomy.

Commentary on the British Pharmacopœia. By WALTER G. SMITH, M.D., Dublin; F.K.Q.C.P.I.; Assistant-Physician to the Adelaide Hospital. London: Smith, Elder, & Co. 1875. 8vo, pp. 766.

IN reviewing an admirable text-book of materia medica and therapeutics recently, we expressed our regret that the author had deemed it necessary to reproduce in his pages so much of the text of the *British Pharmacopœia*. Until the present work appeared, we had almost come to the conclusion—

“Omnibus hoc vitium est scriptoribus.”

But Dr. Walter Smith has not adhered to the beaten track as regards this point; and we have to congratulate him on the production of a really serviceable work, explanatory of the *Pharmacopœia*, but which will, at the same time, require to be read side-by-side with the official volume. In this respect the “*Commentary*” is a decided and refreshing novelty, and, as such, claims our attention from the outset.

After a short explanatory preface, Dr. Smith plunges at once *in medias res*; and, in a simple alphabetical arrangement, both the substances in the “*Materia Medica*,” and the groups of preparations made from them, are presented to our notice. The individual preparations also are inserted alphabetically in their proper place. This arrangement might lead to confusion were it not that the headings of the general introductions to the groups—*e.g.*, *ACIDS*, *ALKALOIDS*, *TINCTURES*, &c., are distinguished by italic capitals. The names of non-official drugs are

similarly denoted. Copious cross-references further diminish the chances of error.

The reader of this "Commentary" will be struck by the excellent manner in which the chemistry of the Pharmacopœia has been described and explained. Even on the third page of the work the key-note is touched, and Dr. Smith introduces us to the modern definition of "*ACIDS*" in the following sentences:—

"*ACIDS*.—The most familiar properties of acids, and indeed those by which they are commonly recognised, are that they have a sour taste, neutralise alkalies, and possess the power of changing the blue colour of litmus and other vegetable blues to red.

"But though these characters apply to all *soluble* acids, they are not sufficiently comprehensive for the purpose of definition, and accordingly we will adopt the strict chemical definition of an acid, viz.:—*A compound of hydrogen in which the hydrogen can be wholly or partially replaced by an equivalent amount of a metal*. The hydrogen so replaceable is termed *basic* hydrogen, and the product which results from the substitution of a metal for the hydrogen of an acid is termed a *salt*, i.e., a "salt" is the metallic derivative of an acid. . . .

"Acids which contain only one atom of replaceable or basic hydrogen are termed monobasic, e.g., HCl. Those which contain two or three atoms of replaceable hydrogen are termed respectively dibasic and tribasic, e.g., H₂SO₄ and H₃PO₄."

The same accuracy in the statement of the chemical relations of the *Materia Medica* is observed throughout the work. Under the heading "*FERRUM*" we find the following:—

"*Chemical Relations*.—Iron is a hard, malleable, and ductile metal, of great tenacity. Sp. gr. 7.7. Exposed to moist air it becomes covered with a reddish layer, *rust*, which is mainly hydrated sesquioxide.

"Certain other metals are closely allied to iron, and manganese has been proposed as a therapeutic substitute for iron.

"Two distinct classes of compounds are formed by iron, viz.:—(a) Those in which the iron acts as a dyad (i.e., combines with not more than two atoms of a monad, such as Cl or I). These are termed the *ferrous* or *proto*-salts. (b) Those in which the group Fe,³ exists, acting with hexad power^a (i.e., requiring six atoms of a monad, or three of a dyad to saturate it). These are termed the *ferric*, *per*, or *sesqui*-salts.

"No ferric compound includes but a single atom of iron.

"The contrast between the formulæ and characters of these two classes

^a Some chemists believe that iron is in the triad state in the ferric salts, thus 2 Fe."

of bodies will better appear from the subjoined table of some of the official preparations:—

FERROUS (PROTO). *Fe.*"

Fe O^a
 Fe I_2

 Fe S

 $\text{Fe}_2 2\text{AsO}_4$
 Fe CO_2

 Fe SO_4
 $\text{Fe}_2 2 \text{PO}_4$

Blue precipitate (Turnbull's Blue) with the red prussiate of potash.^b

FERRIC (PER. SESQUI.). (Fe_2).^a

$\text{Fe}_2 \text{O}_3^a$

 $\text{Fe}_2 \text{Cl}_4$

 $\text{Fe}_2 6 \text{C}_2 \text{H}_3 \text{O}_2$

 $\text{Fe}_2 6 \text{NO}_3$
 $\text{Fe}_2 3 \text{SO}_4$

Blue precipitate (Prussian blue), with the yellow prussiate of potash.^b

"Ferrous (proto) salts are commonly of a lighter colour, less astringent, and less soluble in alcohol (See Ferri Sulph. Granul.); while the ferric (per) salts are brownish yellow, more astringent, and are soluble in alcohol, *e.g.*, Tinct. Ferri Perchloridi.

"All the official ferric compounds, except peroxide of iron, are soluble in water.

"Ferrous salts have a marked tendency to absorb oxygen from the air, and become converted into ferric compounds. Pure sugar preserves them from this change, *e.g.*, Syrupus Ferri Iod., and Ferri Carb. Sacch. A pure protosalt of iron is difficult to obtain or to preserve, and hence most of the official ferrous salts are described as being *partially oxidised*, *e.g.*, Ferri Arsenias. Accordingly, they usually afford precipitates both with the yellow and the red prussiate of potash.

"Ferric salts are not prone to change, and are turned blueish-black by gallic and tannic acids. These acids do not immediately discolour ferrous salts. Ordinary writing ink is gallo-tannate of iron."

Talking of iron, we may observe that the descriptions of this and other important substances, such as *chloral*, *chloroform*, *opium*, and so on, are perfect models of concise and instructive writing.

With the intention of showing the connexions existing between the different preparations of the several metals, the author has compiled a pedigree or genealogical table in each case. This is a useful novelty, which will much enhance the value of the book. We reprint one of these curious genealogies, in which the substances which yield lineal derivatives are printed in Egyptian type:—

^a The two oxides combined form magnetic oxide, Fe_3O_4 .

^b Yellow prussiate of potash precipitates *pure* ferrous salts white, rapidly turning blue. Red prussiate simply darkens the colour of ferric salts, but causes no precipitate.

Phosphoric Acid.

Phosphoric Acid.

Phosphoric Acid.

Phosphoric Acid.

Phosphoric Acid.

Phosphoric Acid.

Magnetic Oxide.
 Fe_3O_4 .

Persulphate.
 $\text{Fe}_2(\text{SO}_4)_4$.

Armenite.
 $\text{Fe}_2\text{S}_2\text{O}_7$.

Phosphoric Acid.
 $\text{Fe}_2\text{S}_2\text{O}_7$.

Magnetic Oxide.
 Fe_3O_4 .

Peroxide.
 Fe_2O_3 .

Tinct. Ferri Acet.
 $\text{Fe}_2(\text{C}_2\text{H}_3\text{O}_2)_4$.

Reduced Iron.
 $\text{Fe} + \text{Fe}_2\text{O}_3$.

Ferri et Amm. Citr.
Ferri et Quin. Citr.
Ferrum Tartaratum.

Within the narrow limits of a review like the present it would be impossible to notice all the points in this "Commentary." We should not be doing our duty, however, did we not call the author's attention to some defects which we hope to see rectified in another edition. First, as to the etymology of words:—although most of the derivations are given very correctly, there are a few slips—thus, "carbolic" is stated to be derived simply from "carbo," whereas "oleum" certainly constitutes a portion of the word; "κῆτος," not "cetus," gives us "cetaceum;" "sulphur" is not the barbarous compound "sal" + "πῦρ," but the Sanscrit "sulvâri;" "Juniperus" quasi "Juveniparus," not "Juveniperus," &c. We wonder, too, whether "laudanum" is not from the Greek λῆδανον, rather than from "laude-dignum." Then, again, many derivations are omitted—*e.g.*, "mastiche," "rhamnus," and so on. A second point is the omission of any posological table, the doses of preparations being given only in exceptional instances. However out of place the doses are when stated in a Pharmacopœia, we hold that they should be given, and most fully, in a "Commentary" upon it. In only a few cases, again, do we obtain information as to the relative cost of preparations having the same properties, *e.g.*, the solution and tincture of perchloride of iron. This is an important omission, for, as a rule, medical students and practitioners are deplorably ill-informed as to the pecuniary value of the remedies ordered. Where the means of the patient are limited this becomes a consideration of much moment, and we would gladly see some hints on the subject given in so comprehensive a volume as that under review. Lastly, a few omissions from the copious index at the end of the book require attention. *Lapis calaminaris*, *Calamine*, *Vienna paste*, *Cerussa*, *Sydenham's laudanum*, are examples of names met with in the text, but to which the index contains no reference.

In conclusion, we feel an honest satisfaction in strongly recommending Dr. Smith's "Commentary" to every reader of the *British Pharmacopœia* as an accurate and reliable guide to the understanding of that work.

Dental Pathology and Surgery. By S. JAMES A. SALTER, M.D.
F.R.S., &c. London: 1874. Longmans, Green
Pp. 394.

NOTHING can be more gratifying to the student of dental surgery than the admirable researches

observations which have been published during the last twenty-five or thirty years by Nasmyth, Goodsir, Tomes, Owen, Heath, &c., all helping to raise the profession of the dental surgeon from the slough of quackery and advertising incompetency (in which it has so long struggled) to a position of real usefulness and distinction.

Mr. Salter has done more than well in collecting together, in a convenient and permanent form, the papers he has published on Dental Pathology and Surgery during the last twenty-three years—the time he has devoted himself exclusively to the practice of dental surgery.

The work consists of twenty-eight chapters, all of deep and practical interest to practitioners of dentistry as well as surgery. We beg to congratulate Mr. Salter on his simple, readable, and vigorous style, and, above all, on the eminently practical and common-sense views he inculcates, displaying a marked and refreshing contrast to the theoretical and wordy sentimentalism of some recent publications of our American cousins, many of whose works are almost unreadable from their involved style and the frequently impracticable nature of their views.

It would be almost impossible in the amount of space at our disposal to do more than give an outline of the subjects which are treated in this admirable volume. The general anatomy of the teeth, with their functions, the position and characters of supernumerary teeth, the cause and treatment of irregularities in the position of teeth, the chemical and physical character of caries and its treatment, necrosis of teeth, odontomes, &c., are described with all the earnestness and accuracy of an accomplished student of histology.

The following extracts will give a good idea of Mr. Salter's work, and prove of general interest to the profession, as the affections are not uncommon, often overlooked, and seldom referred to the proper cause:—

“The eruption of the wisdom teeth is occasionally attended by very painful and distressing symptoms, and these may be protracted through many months, and even years, unless relieved by surgical interference. The frequent disproportion that exists between the size of the teeth and the jaws which hold them not only produces an irregularity of the teeth in the front of the mouth, but very often leaves so small a space for the last molar, the *dens sapientiæ*, that its advent is postponed, or may be prevented for a long period, and the repeated efforts at evolution become the cause of much suffering and even serious illness. In these cases the

wisdom teeth, especially those of the lower jaw, have so little room that the front cusps of the teeth are frequently the only parts which are visible, the remaining portion of the tooth being covered by the mucous membrane, where it passes up the ascending ramus and is reflected to the jaw and cheek; the imperfect room for the wisdom teeth, thus holding them back in their bony bed, also perverts their direction of growth and dislocates them. The painful symptoms which attend the cutting of the upper wisdom teeth, where there is insufficient room, are trivial to those which occur in similar conditions in the lower. In the upper jaw the wisdom teeth, when misplaced, are usually either directed backwards or outwards, or in both directions combined. When the tooth points backwards, every time the mouth is closed its crown comes in contact with the mucous membrane about the base of the coronoid process. When the direction is outward, which is more common, the tooth projects into the cheek, and, when the jaws are brought together, a portion of the mucous membrane in this region is nipped and pinched. This causes much pain, the surface ulcerates and is extremely tender. The sub-mucous areolar tissue becomes infiltrated and stiff and hard, as well as painful. Beyond this the symptoms occasioned by the wisdom tooth in the upper jaw very seldom extend, and the removal of the tooth is always followed by complete and immediate relief. The position of the upper wisdom tooth thus impacted is sometimes such as to render it difficult of removal, and it frequently can only be accomplished by a pair of forceps with especially long and curved blades.

“The difficulty which most commonly occurs with the inferior *dentes sapientie* is attributable to the comparative shortness of the horizontal ramus of the jaw. The tooth usually grows in the right direction and position as regards its neighbour in front, but from the imperfect lengthening of the jaw backwards the birth of the crown is only partial and incomplete. The tooth is upright, but only the front portion is able to emerge. This produces a terrible pinching of the mucous membrane over the tooth every time the jaws are brought together. Before, however, the enamel eminences of the crown make their appearance, the soft structures behind the second molar become much inflamed, and even suppurate, the pus secretion appearing to be within the enamel sac of the tooth, between the tooth crown and the membrane covering it. This produces considerable inflammation in all the surrounding parts, the cheek and fauces suffer, the movements of the jaw are stiff and painful, swallowing is difficult, and attended with suffering like that of sore throat. Occasionally the resistance which is offered to the vertical growth of the wisdom tooth produces a dislocation in its direction, and it grows horizontally forward, more or less. This is often attended with serious consequences. The direction is sometimes combined with the inward leaning of the crown as well. This is uncommon, but I

have seen it in the worst case of impaction that has occurred in my practice.

"There is one peculiar symptom which is frequently associated with difficult eruption of the lower wisdom teeth, but which may also arise from the inflammation produced by periostitis in caries or other teeth diseases affecting the posterior molars, second and third. The symptom in question consists of a spasmodic contraction of the muscles of the jaw, especially the masseter muscle. The contraction is continuous and persistent, and appears to be the result of contiguous irritation. It is not a spasm which varies in intensity, but is of a truly *tonic* character, the muscles being permanently set so as to keep the jaws nearly closed, and susceptible only of very slight separation. The jaw can usually be opened to a small extent, and then is definitely fixed so as to give the impression that some hard substance prevents further movement. Such, however, is not the case, for directly the cause of the irritation is removed the spasm rapidly ceases, and then the mouth can be fully opened.

"The pain which accompanies and precedes the cutting of a wisdom tooth, when this is retarded, is of a dull, aching character, not unlike rheumatism, and it often extends over a considerable area, over the side of the head and down the shoulder. The parts on the side affected in the immediate neighbourhood of the tooth frequently swell to a considerable extent, and the lymphatic glands behind the jaw are sometimes enlarged and tender.

"But far more serious consequences may arise from impaction of the lower wisdom teeth in the development of abscess, which is sometimes considerable, and extends along the cheek and jaw. It is not unfrequent even where there is sufficient room for the eruption of the tooth for pus to be formed, and it has appeared to me that it occurs in the capsule of the tooth, the pus being secreted by that which was the enamel pulp. I may mention that when I cut my lower wisdom teeth at the age of sixteen, a little sac of pus formed over each tooth before its appearance, and though, from the early age at which the teeth were cut, there was some crowding, still it was not of a nature to render the evolution of the teeth a matter of much difficulty. In severer cases the pus burrows among the areolar tissue along the periosteum of the jaw; the neighbouring soft structures become infiltrated with lymph, and the integument is glued irregularly to the bone. Pus may burrow in these cases to a considerable extent, and sinuses open here and there along the track which the fluid takes, leaving afterwards a series of red shining cicatrices. I have seen the side of the face from the tragus of the ear and the angle of the jaw behind to the angle of the mouth and mental foramen in front a web of pus-discharging sinuses, and which, after their cure by the removal of an impacted wisdom tooth, left an integument, thin and

bound down to the bone with the glossy, tense, cicatrix-like aspect of a recently healed burn—a great and permanent disfigurement.

“The French surgeons have been particularly alive to the interest and importance of these cases, and have published valuable contributions to their illustration.

“Velpeau delivered an interesting lecture on this subject at the Hospital of La Charité, a translation of which appeared in the *Journal of the Provincial Medical Association* for 1841 (Vol. II., p. 104), in which he fairly remarks that the subject has been ‘too much neglected by medical men.’ I beg to refer the reader to this interesting memoir. Another and more recent lecture on the same subject has been published by M. Nélaton in the *Journal de Médecine et de Chirurgie Pratique*, tome xxxiii., p. 61, Février, 1862, entitled ‘Accidents produits par l’éruption des dents de sagesse.’

“In this lecture he refers to a memoir of Toirac, who appears to have been the first person to have written on this subject. Nélaton remarks that the symptoms produced in this painful cutting of wisdom teeth have been mistaken for scrofulous caries of the jaw, for syphilis, and for cancer.

“Besides the local symptoms which the impaction of the wisdom tooth may produce, others of secondary nature occasionally arise. I have seen an instance in which the arm of the affected side was partially paralysed. These symptoms vanished upon the removal of the wisdom tooth. Instances have occurred also in which the impaction of the tooth has occasioned epilepsy and delirium; and Velpeau records, on the authority of M. Esquirol, a case in which a lady was brought to La Charité Hospital labouring under mental derangement. She was quite restored by the liberation of an impacted wisdom tooth by means of simple lancing of the gum.

“*Treatment.*—When the wisdom tooth of the upper jaw is misplaced or impacted so as to produce inconvenience or painful symptoms, the treatment is very obvious and very simple. The tooth is useless, and worse than useless, and it may be removed without hesitation. I do not remember ever to have met with an instance in which a misplaced upper wisdom tooth was associated with locked-jaw complication, which is so common when the lower wisdom tooth is the subject of this condition. The teeth may be generally got at without much difficulty, provided suitable forceps are employed. In one instance I was unable to reach the upper wisdom tooth, which had grown forward in a horizontal direction, producing absorption of the second molar fangs. In this case I was obliged to remove the tooth in front; the wisdom tooth was afterwards extracted with ease. In the treatment of the inferior wisdom teeth much will depend upon the degree of the impaction of the tooth and the age of the patient. If the tooth is simply covered over by dense

gum, the free lancing of the latter is all that may be needed. Where painful symptoms arise in young subjects whose wisdom teeth push forward at a precocious period, and before the jaw is large enough for their reception, it should be remembered that time will do much to accommodate them by the increased size and posterior elongation of the horizontal ramus of the jaw; and a good deal of inconvenience ought to be borne in such cases rather than sacrifice a sound tooth. At the same time, if such a patient have a carious first or second molar, considerable relief will be obtained by its extrication. And, indeed, this remark would apply to patients of any age, though with less effect in those who are older. As regards lancing the gum, it is well not only to lay bare the crown of the tooth, but to remove the flaps of gum which have overlaid it.

"The closure of the jaws is often so complete that it is impossible to get at either of the molar teeth until that condition has been combated. The jaws can be opened without much difficulty by means of a wedge gradually pushed between the teeth. It is sometimes necessary to continue this operation for many days, but I prefer, if possible, to do it in one day by the diligent perseverance of the patient, as the jaws are apt to close again somewhat in the night, so that the patient has to do much of the work over again. Steel instruments have been devised on the principle of the ear speculum, composed of two shafts or blades which separate slowly but forcibly by the action of a screw. I prefer a wedge of hard wood, such as beech or boxwood, which is pushed further and further into the mouth as the contracted masseter yields before it. If this is followed up from early morning until the afternoon the mouth will generally be sufficiently opened to allow the operator to reach the tooth which he intends to extract. Another arrangement, however, invented by Mr. Maunder, seems to possess especial advantages. It is a conical wedge, upon which is cut a spiral screw-worm, gradually increasing in diameter and thickness of the worm. It resembles the shell of a univalve mollusc, such as a whelk-shell, but the spiral is more elongated and drawn out. Where the contraction of the mouth is the result of an impacted wisdom tooth, occurring as it does in early life, the teeth in front of the mouth are almost always firm, and will bear the use of this instrument. Upon introducing the point of Mr. Maunder's gags between the incisors or canines or præmolars, and slowly turning the instrument, it evenly and regularly progresses, separates the jaw, and, as I have thought, with quicker results than any other method. In removing a deeply impacted lower wisdom tooth, one rather serious accident has been known to occur on several occasions—namely, crushing of the inferior maxillary nerve, leading to sentient paralysis of the nerve and lip of that side. Cases of this casualty will be found recorded in the chapter on accidents occurring in tooth extraction.

"The affections of the nervous system dependent on the teeth naturally divide themselves into those which are reflex—secondary and remote; and those which are direct—immediate and from contiguity. In the former category would rank epilepsy, neuralgia, paralysis; in the latter local pain, facial palsy, some forms of amaurosis, &c. In other instances, such as the exalted sensibility of the tegumentary nerves of the face, erratic pains through the maxillary nerves, associated with tooth-ache, it might be difficult to say whether the phenomena are mostly reflex or direct: they probably comprise both conditions.

"The situation of the teeth, their abundant supply of nerves, and the great and diffuse swelling which their diseases produce in contiguous structures, inevitably involve much nervous disturbance and complication. The inferior lower molars are but little removed from the tonsils and Eustachian tube, from the parotid region, and the external auditory passage. The fangs of the upper back teeth are close to the orbit, and its all-important contents; and more posteriorly they approach the sphenomaxillary fossa and fissure. Thus it is easy to account for the nervous complications which are directly entailed by the spread of inflammation from the periosteum of diseased teeth.

"By far the commonest reflex nervous disturbances, to which dental irritation gives rise, are neuralgic pains of the head; and this is especially the case where the upper teeth are implicated: the supra and infra orbital nerves, the globe of the eye, the temple, and particularly a spot near the vertex a little on one side—the side of the affected tooth—in all these regions 'dental neuralgia' is really very common: and I have observed not unfrequently that, where the pain has continued long, the integument, at the painful spot, has become hot and tender and red. I have noticed this in my own person when suffering from a carious upper molar tooth: the induced tenderness of the brow was such as to render the disturbance of the hairs of the eyebrow intensely painful.

"Reflex nervous irritation dependent upon dental disease is most uncertain and capricious in its manifestation. One person will suffer much from a comparatively slight cause, while in others the same condition more severely developed will produce no such result. There is unquestionably in some persons a neuralgic diathesis; and it is not improbable also that in some individuals there may be a congenital, or induced, peculiarity in the centric, or perhaps collateral, relations of certain nerves, by which the exalted polarity of one may be passed on and so reflected upon another with exceptional facility. In persons obnoxious to these forms of neuralgia from dental irritation, nothing is so liable to induce an attack as exhaustion or depressed nutrition: and patients will often say that the attacks only come on when they are very tired, or have gone long without food.

"*Pain* is only one of the phenomena of reflex dental nerve irritation.

It may induce *muscular spasm, muscular paralysis, paralysis of some of the nerves of special sense, perverted nutrition.*

"As regards the teeth themselves which excite this exalted nervous irritability, nearly all their diseases appear capable of causing this condition:—

"Caries, with or without exposure of the pulp. Exostosis—hypertrophy of the crista petrosa. Nodular developments of dentine in the pulp cavity. Periostitis, plastic or suppurative. Impaction of permanent teeth in the maxillary bones. Crowding of teeth from insufficient room.

"Each and all of the above enumerated abnormalities of teeth have caused manifestations of reflexed nervous irritation, though, as I have remarked, they may exist in the severest forms without producing any such result."

Mr. Salter supplies the following list of the casualties of tooth extraction, and most honestly and ably illustrates each accident with authentic cases taken from the experience of himself and others:—

- I. Breaking of tooth.
- II. Breaking of jaw.
- III. Taking out wrong tooth.
- IV. Taking out two teeth instead of one.
- V. Removing capsule of growing permanent tooth in extracting its temporary predecessor.
- VI. Tearing gum.
- VII. Wounds produced by slipping of elevator.
- VIII. Extracted tooth falling into the air-passages.
- IX. Extracted tooth falling into the pharynx and being swallowed.
- X. Crushing the inferior maxillary nerve.
- XI. Dislocating the lower jaw.
- XII. Breaking one tooth in extracting another.
- XIII. Cutting lip in removing a jagged extracted tooth.
- XIV. Forcing tooth or tooth-fang into the antrum.
- XV. Forcing tooth-fang into an abscess-excavation in maxilla.

In hæmorrhage, after extraction of teeth, Mr. Salter is convinced that it is a great mistake to treat these cases topically, as they are generally manifestations of constitutional vice, and require general treatment. He suggests either of the following prescriptions as likely to be of service:—

Vitelli ov. ij.
 Olei terebinth. ʒiss.
 Sacchari ʒij.
 Tinct. ferri sesqui-chloridi ʒiij.
 Aquæ ʒviiij.

A table-spoonful to be taken every hour; or—

Tannin gr. v.
 Spt. vini rect. ʒss.
 Aquæ ʒjss.

To be taken every hour.

As tannin is apt to produce nausea when taken on an empty stomach, he recommends its association with some (non-albuminous) food. In the irritability of sanguineous exhaustion, opiates may become necessary in large doses.

The book closes with an admirable chapter on Cleft and Perforate Palates, in which the points we noticed some time ago in a review of Mr. Oakley Cole's works are carefully considered and dwelt on. We can heartily recommend the book to our readers as a most valuable aid in many cases of difficulty and obscurity.

1. *Outlines of Zoology and Comparative Anatomy.* By MONTGOMERY A. WARD, M.B., M.Ch. Dublin: Fannin & Co. 1874. Pp. 150.

2. *Catalogue of the Preparations of Comparative Anatomy in the Museum of Guy's Hospital.* By P. H. PYE-SMITH, B.A., M.D., Lond. London: Ash & Co., Printers. 1874.

THE first of these works is an exceedingly neat little volume, intended to assist men who are preparing for examinations at which some knowledge of zoology and comparative anatomy is required. It begins with an introductory chapter in which the leading differences between organic and inorganic bodies are pointed out, and the principal classifications of the animal kingdom, which have from time to time been made, are enumerated. The sub-kingdoms, classes, orders, genera, and species are then taken in their order, and the distinguishing characteristics of each concisely pointed out. In a work of this kind an author is compelled to avoid all discussion of disputed points; and, although there are some statements open to criticism, we are satisfied that the student who succeeds in fixing in his mind the characteristics given in Dr. Ward's manual

will honourably pass any examination in zoology to which students of medicine are subjected. The Greek and Latin roots from which the various names are derived are given, and constitute an important addition to the convenience and value of the volume. The information is presented in as condensed a form as possible, and the book presents very much the character of a pocket note-book, in which the facts, which it is necessary to retain in the memory until the dreaded ordeal is passed, have been set down for rapid and ready reference. The majority of medical students have neither the taste nor the time necessary for the acquirement of that genuine knowledge of comparative anatomy which museum study and a perusal of the larger treatises are alone fitted to supply; and to medical students, therefore, Dr. Ward's Outlines will be specially useful.

The second book noticed, though only professing to be a Catalogue, is replete with well-arranged and valuable information, and, to the students of "Guy's," must be a boon indeed. We hope that, when the new museum of the Dublin University is finished, some similar catalogue will be prepared, that Dublin students may have an equal facility in using the large anatomical collection of the University for the study of comparative anatomy. If such a catalogue be contemplated, no better model can be followed than that of Dr. Pye-Smith.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.*

By WALTER G. SMITH, M.D., Dublin; Fellow and Censor
K. & Q.C.P.I.; Examiner in Materia Medica, Q.U.I.; Assistant
Physician to the Adelaide Hospital.

ART. 1. Apomorphia.

- „ 4. Asparagus, effects on urine.
- „ 7. Chloral.
- „ 6. Croton-chloral.
- „ 3. Fool's Parsley.
- „ 2. Jaborandi.
- „ 5. New Poultice.

1. *Apomorphia*.—In previous *Reports* (Aug., 1870; Aug., 1872; Aug., 1873) abstracts were given of the observations of Pierce, Gee, Siebert, Riegel, and Boehm, upon this remarkable and potent base, which appears to have been indicated for the first time in 1845 by a pupil of Wöhler, named Arppe. Its peculiar properties, however, escaped notice until the year 1869, when Matthiessen and Wright re-discovered it, thoroughly investigated its chemical relations, and announced its curious effects upon the organism.

Within the last two years the literature of this new gift of chemistry to therapeutics has received several accessions, and a tolerably complete monograph upon it has been published by M. Victor Bourgeois: (*De l'Apomorphine; Recherches cliniques sur un nouvel émetique*. Paris, 1874.)

The conclusions to which this author is led accord, in all essential

* The author of this Report, desirous that no contribution to the subjects of *Materia Medica* and *Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal, they will be forwarded.

points, with the observations of Matthiessen and Wright, and are briefly as follows:—

1. Apomorphia, or rather hydrochlorate of apomorphia, when pure, and employed in suitable doses, is a rapid, simple, and harmless emetic.

2. It is *rapid*, for its action always takes place, at latest, within ten minutes after administration.

3. It is a *simple* emetic, for it does not appear to exert any influence upon the other functions.

4. It is *innocent*, and does not seem to possess dangerous toxic properties.

5. Lastly, the facility with which it can be administered by hypodermic injection fulfils a therapeutic desideratum, and suggests its adoption by physicians in some special circumstances, such as the medication of children and of the insane.

At present the whole supply of apomorphia is derived from two houses—viz., Macfarlan & Co., Edinburgh; and Merck, of Darmstadt. The preparation supplied by the former is said to be the most active and reliable, but, as yet, there is no convenient test for determining the purity of the product.

As an average dose for an adult man of the (Scotch) hydrochlorate of apomorphia, M. Bourgeois fixes on 1 cgrm. (nearly $\frac{1}{4}$ th gr.) hypodermically, and 3 cgrms. (i.e., $\frac{1}{4}$ gr.) by the mouth. The best form of solution is that obtained by dissolving 1 part of the salt in 100 parts of distilled water. If the proportion of the salt be greater, the solution becomes muddy, and it is necessary to add one or two drops of HCl in order to clear it—a serious objection in the case of a liquid intended for subcutaneous injection.

From his experiments on dogs, the author concludes that the toxic action of apomorphia is extremely feeble; the minimum dose capable of inducing vomiting is about 3 mgrms., and the effect does not appear to be weakened by repetition of the same dose on several successive days.

An observation of Siebert bears upon this point. This experimenter had a bitch, weighing 6 kilogs., which invariably vomited within three minutes after a dose of 1 mgrm. of hydrochlorate of apomorphia. For fifteen days the same injection was practised, and was always followed by the same result. On the fifteenth day 1 decigr. was injected; the animal vomited for three-quarters of an hour, and was restored at the end of another hour. After the lapse

of a week, the experiment was repeated for fifteen days consecutively, and always with the same result.

It is a noteworthy point that no local irritation follows on the hypodermic injection of apomorphia, either in man or the lower animals. The physiological action of apomorphia upon the pulse agrees with that observed under the production of nausea and vomiting by other means—viz., acceleration before emesis takes place, and subsequently a slight depression, with speedy return to the normal. The respiration becomes quickened and irregular previously to vomiting, and the temperature is not sensibly affected in man. There is complete freedom from gastro-intestinal irritation of any kind, and neither colic, tenesmus, nor abundant stools were observed. In many cases, the act of vomiting is succeeded by an irrepressible desire to sleep. A full dose of apomorphia will induce vomiting at the end of *one minute*, whereas the emetic action of a moderate dose of emetin (active principle of ipecacuanha) is not manifested for twenty or thirty minutes.

In the treatment of infantile complaints, the use of apomorphia as an emetic has sound warrant, and MM. Riegel and Boehm, who have experimented in the Hospital for Children, in Wurzburg, insist strongly on this point.

M. Constantin Paul (*Rép. de Pharm.*, 25th Nov.) has experimented on man with Merck's apomorphia, and finds that vomiting of a glairy fluid, neutral to litmus paper, supervened in from five to thirteen minutes after the injection of 1 cgrm. Bile was rarely found in the ejected matters. On account of its rapidity of action, apomorphia is especially indicated in some cases of poisoning, *e.g.*, by strychnia; and M. Paul has utilised its speedily nauseating influence in the treatment of two cases of hæmoptysis.

In the Physiological Laboratory of Geneva a long series of experiments on the physiological effects of hydrochlorate of apomorphia have lately been performed by M. David, under the direction of M. Prevost.

The apomorphia salt was furnished by Duvernoy, of Stuttgart, and the aqueous solution, although it changed colour, preserved its properties for several weeks. In the dog, a dose of from $\frac{1}{4}$ to 2 mgrms. produced vomiting in four or six minutes, preceded by a brief stage of nausea. In the cat, the emetic dose was much higher, and appeared to vary considerably. In the pigeon, the minimum emetic dose was 4 mgrms. Sudden vomiting within six minutes was produced in man by a dose of 3 or 4 mgrms.

Influence of Various Agents on the Action of Hydrochlorate of Apomorphia.—Chloroform, given in full doses, retards the action of apomorphia on the dog until the time of waking. Chloral injected into the veins suspends entirely the action of apomorphia. Morphia, even in a dose of 3 cgrms., in dogs of medium size, prevents the action of apomorphia from being manifested. Apomorphia, therefore, would be useless in a case of acute poisoning by morphia. In the pigeon and guinea-pig, the state of morphism induced by a dose of 2 cgrms. does not prevent the physiological action of apomorphia. Section of the vagi nerves in a dog, with or without the aid of chloroform; does not, in any way, modify the action of apomorphia. This result confirms the observation of M. Chouppe, and is opposed to that of M. Quehl.

Excitant Action of Apomorphia.—Hydrochlorate of apomorphia seems to have a special action upon the nerve centres of some animals, e.g., cat, pigeon, rabbit, rat, and guinea-pig. Cats are thrown into a state of fear and agitation by a dose of from 2 to 35 mgrms., even when vomiting is not caused; and this is not always, as Siebert supposed, interrupted by the act of vomiting. Rabbits, a few minutes after the subcutaneous injection of 6 or 8 mgrms., rush from one corner to another of their cage, utter low cries, and are terrified at the least movement around them. Pigeons, immediately after a dose of $\frac{1}{2}$ to 4 mgrms., are agitated, hop about, peck around them violently, and attack other pigeons which may be near them. Rats, under a dose of 2 or 4 mgrms., appear as if intoxicated; they raise themselves on their paws, and fall backwards, in spite of incessant efforts to save themselves. Guinea-pigs, three or four minutes after a dose of from $\frac{1}{2}$ to 12 mgrms., become terrified, and presently they begin to gnaw continually at everything within their reach. (*Journ. de Pharm. et de Chim.*, Dec.) Dr. Jurasz has employed apomorphia as an *expectorant*, with much advantage, in tracheitis and bronchitis. The tenacious sputa were, in all cases, readily dislodged, and the dry blowing rhonchi became moist and less pronounced. The dose administered was from 0.04 gr. to 0.12 gr. of hydrochlorate of apomorphia, dissolved in water, acidulated with hydrochloric acid.—(*Brit. Med. Journ.*, Aug. 29; from *Centralblatt*.)

A state of impending syncope, of such a nature as to cause grave apprehension, has already been observed in several patients, and Dr. Brochin records a case in point, following on the injection subcutaneously of 3 or 4 mgrm. of hydrochlorate of apomorphia.—(*Lond. Med. Rec.*, Jan. 27.)

2. *Jaborandi*.—In the early part of last year Prof. Gubler, of Paris, received from Dr. Coutinho, of Pernambuco, a limited supply of a Brazilian drug bearing the above title.

Its remarkable, and indeed unique, diaphoretic and sialogogue properties have attracted considerable attention, not only in France, but also in this country; and although the provings made with it have been few as yet, the concordance in the results noted by different observers is very striking. It seems that we have got possession of a drug which uniformly and distinctly exercises a powerful primary sudorific influence, and that, in the hitherto vague and uncertain class of diaphoretics we can now reckon at least one medicine whose action in promoting the cutaneous exhalation appears to be undeniable.

In investigating a new drug it is essential, in the first place, to determine with accuracy its botanical origin, and to be assured of the identity of the samples which fall into the hands of different experimenters.

The names *jaborandi* and *jamborandi* appear to be generic terms commonly used in Brazil to designate stimulant, sudorific, and sialogogue plants. From an examination of the specimens furnished by Dr. Coutinho, with the Brazilian plants in his own herbarium, Prof. Baillon was led to identify *jaborandi* with *Pilocarpus pinnatifolius* (Lemaire), N. O. Rutaceæ.*

Some doubt was entertained as to the correctness of this opinion, but strong confirmation of its substantial accuracy is afforded by Mr. E. M. Holmes, who has carefully described the botanical characters of a specimen of Pernambuco *jaborandi* obtained through Messrs. Hearon, Squire, and Francis, and he concludes that it is derived from a species of *Pilocarpus*, probably *P. pinnatifolius*.^b On this point certainty cannot be arrived at until the flowers are examined. The drug, as imported at present, consists of the broken leaflets of a large impari-pinnate leaf, which is dotted with a number of pellucid glands.

The odour is very characteristic, and resembles that of a mixture of Indian hemp, matico, and cubebs. When chewed the taste is piquant, and excites a sensation of glowing heat on the tongue, like that caused by pellitory root.—(Martindale.)

Chemical analysis.—M. Rabuteau has made a partial investigation of *jaborandi*, limited in consequence of the small quantity of the

* *Rép. de Pharm.*, 25 Mars, 1874.

^b *Pharm. Journ.*, Jan. 23, 1875.

leaves at his disposal. He finds that they contain:—1. A volatile principle, which is not analogous to the essential oils contained in aromatic plants; 2. The bitter taste is due to a principle soluble in water and in alcohol; 3. No evidence of an alkaloid or definite active principle was obtained.*

Effects on the system.—M. Gubler has tested the action of jaborandi in a considerable number of cases in the hospital Beaujon, and in every instance found it to be a powerful diaphoretic and sialogogue. Its influence is felt within a few minutes, and, almost to a certainty, soon after its administration the sweat streams down the face and over the whole surface of the body. The saliva flows so abundantly that articulation becomes almost impossible, and M. Gubler has been able to collect more than a litre of saliva in less than two hours. At the same time the bronchial secretion is increased, and, in one or two cases, diarrhoea supervened. It is a remarkable and significant circumstance, as Dr. Coutinho had pointed out, that warmth had but little influence in the production of the sudorific action of jaborandi.

Although it is naturally a preferable mode to administer the infusion tolerably warm to the patient covered with the bed-clothes, yet the new diaphoretic does not require such conditions in order to manifest its powers. For example, one of M. Gubler's pupils, who perspired only with great difficulty, was made to sweat by drinking, while up and about, a cup of nearly cold infusion of jaborandi.—(*Rép. de Pharm.*, 25 Mars.)

Mr. Martindale, with a laudable desire to ascertain for himself the physiological action of a new sample of the drug which he had received, made a personal experiment, which was followed by such results as effectually dispelled any scepticism he may have had on the activity of the remedy.

The phenomena produced were very striking, and are best conveyed in his own words:—

“I made an infusion of sixty grains of the bruised leaf in five ounces of boiling water, let it stand fifteen minutes and strained it. On pouring the water upon the drug I noticed the characteristic odour almost entirely disappeared. The infusion was of a pale sherry colour, had a mawkish bitter test, but did not excite the glowing heat upon the tongue that the leaf itself did; this I thought strange, and on tasting the dregs I found they still retained their pungent taste when chewed. It was evident to

* *Pharm. Journ.*, May 16, 1874, from *L'Union Pharm.*, XV.

me that if its diaphoretic properties depended on the principle having this pungent taste, boiling water does not extract it. At 11:30 p.m., on retiring to rest, I swallowed as much of the dregs as I could, probably 50 out of the 60 grains used, and washed them down with the infusion. In five minutes I felt a glow, an increased circulation, an uneasiness in the head, became restless, and the secretion of saliva began to increase. At 11:45, a quarter of an hour after taking the dose, I was perspiring freely. The salivation and perspiration continued to be profuse until my sight became blurred. At a distance of four feet I could see my wife, but could not distinguish her eyes. On this occurring I became a little anxious, as I thought I must have taken an overdose. I requested that Dr. Ringer might be sent for; he came about 12:15 a.m. The impaired vision still continued, but I was glad to find that it was only at a distance—near objects I could see distinctly enough. The pupils of the eyes were slightly dilated, I was informed. The pulse, when first noted, was 96, and got up to 104. The temperature was not taken. The depression was never very great, but a little before Dr. Ringer came I began to shiver, more clothes were put on the bed, and some spirit and water given to me. The excessive perspiration still continued from all parts of the body. A Turkish bath, which I have frequently had, and seen others have, was nothing to it; the saliva for a time required almost constant ejection; the secretion of this from the glands in the cheeks caused a kind of collapsed feeling in them. This so affected my speech that articulation was both difficult and indistinct. Eventually, about 1 a.m., I was sick, and vomited at first a quantity of saliva which I had swallowed. Putting my finger in my mouth, vomiting was further excited, until a portion of the *Jaborandi* returned. The effects were now subsiding; more spirit and water were given to me; my night-shirt, soaked with perspiration, was changed. I was put into a warm blanket, and about 1:40 a.m. I fell asleep and slept a quiet sleep until 6 a.m. The pulse on awakening was 88—normally with me it is 80. I got up about 7:30 a.m., and although I felt squeamish all next day I was able to attend to business as usual. When the action was at its height, on uncovering my arm, I am informed the perspiration passed off in steam from my hand and night-shirt sleeve. The saliva collected, which was distinctly alkaline, measured 16 ounces, in addition to which a quantity had flowed on to the pillow while I slept, as it was quite wet in the morning. I came to the conclusion that I should not like to pass through the same ordeal again.”—(*Pharm. Journ.*, Jan. 16, 1875.)

In the December number of the *Practitioner*, Drs. Sydney Ringer and Alfred Gould contribute the results of four experiments on three healthy lads, of ages varying between eight and twelve. They gave 30 grains of the infused drug, together with

the dregs, and kept the boys in bed covered with their usual amount of bed-clothes. Their observations, on the whole, coincide with those of the French observers (Gubler and Rabuteau). In three instances the drug produced perspiration; one lad's skin remained quite dry throughout the experiment. In two of the boys perspiration commenced in from 10 to 15 minutes; in the third case it was delayed for 35 minutes, becoming profuse in about half an hour, continuing so for half an hour to an hour and a half, and remaining slightly developed for two to four and a-half hours. There was some salivation in all, and in two cases it was abundant, especially in the boy whose skin remained dry. The salivation appeared to occur *pari passu* with the diaphoresis.

An increase in the bronchial secretion, indicated by a loose cough, was noticed in one case only. In all the cases, even when diaphoresis was not excited, a decided fall in the temperature was observed from 0.6° to 1° F., or possibly more. The fall in temperature was not due to the natural diurnal changes. In each experiment the pulse was quickened by 40 or 50 beats, the cardiac impulse was increased, and flushing of the face was caused in those instances in which sweating took place. No close relation existed between the rapidity of the pulse and the fall of temperature. In three cases the medicine produced considerable drowsiness, together with some nausea, faintness, and prostration. The lad who failed to perspire vomited. The perspiration, therefore, was not due to the nausea, nor, indeed, did they complain of it. The vomiting came on suddenly, and was not repeated.

At a late meeting of the Paris Société de Thérapeutique, M. Robin gave an account of some researches conducted in M. Gubler's wards. When an infusion of 4 grm. (about 3i.) of jaborandi leaves is administered to an adult, the following changes take place in the urinary secretion:—The quantity of urine diminishes in a very noticeable manner on the day the remedy is administered, but on the next day there is sometimes a slight augmentation—sometimes the usual amount. The urea, chlorides, and uric acid, undergo similar modifications in quantity. Examination of the saliva and the perspiration did not yield evidence of the presence of uric acid; but urea was found in notable quantity in each of these secretions. In thirty-two experiments, in which the temperature and the pulse were noted, it was observed that at the moment sweating was produced there was an increase of the pulse and temperature, which remained persistent during the period of active

perspiration, or sometimes slightly diminished. After the diaphoresis a very decided lowering of the pulse and temperature were observed, and this sometimes continued for two days subsequent to the experiment. Sphygmographic tracings, taken at different stages of the administration of this drug, showed almost complete asystolia, with a very noticeable diminution of vascular tension during the sweating stage. When administered in fractional doses, jaborandi does not produce either perspiration or salivation, but becomes a powerful diuretic. In the case of animals, as dogs and guinea-pigs, in addition to the salivation, an enormous secretion from all the intestinal glands was noted, accompanied by considerable congestion of the mucous membrane, which might go on to hæmorrhage.—(*Lond. Med. Record*, Dec. 16, from *Bull. Gén. de Thé.*, Nov. 30.)

M. Carville has utilised the action of jaborandi in studying the mechanism of salivary hypersecretion in the submaxillary gland of dogs, and the experiments hitherto made point to the conclusion that jaborandi does not affect the vaso-motor system.—(*Lond. Med. Rec.*, Dec. 23.)

Therapeutic uses.—Jaborandi has been employed for years past in Brazil as a sialagogue and diaphoretic, and M. Coutinho has prescribed it in a number of visceral and dyscrasic affections, with effects which will be described in a forthcoming work.

M. Gubler is of opinion that jaborandi, as the first incontestable example of a direct and powerful diaphoretic, will fulfil a rational indication in the treatment of various diseases. For example, in the first period of affections à frigore, in bronchitis with loose râles, with or without emphysema, in albuminuria and dropsies, in diseases due to miasmata or morbid poisons, in eruptive fevers delayed in their evolution, &c., &c.—(*Rép. de Pharm.*, 25 Mars, 1874.)

In the *Lond. Med. Rec.*, Feb. 3, a long abstract is given of the interesting observations more recently instituted by Féréol, Ringer, Gould, and Tweedy. The curious ocular effects of jaborandi noted by the latter gentleman from personal trial require further confirmation and extension, and may prove of importance in practice.

3. *On Fool's Parsley, or, Lesser Hemlock; Æthusa Cynapium, N. O. Umbelliferae.*—No physician of the present day has done so much good work in establishing a correct knowledge of the action

of some of our important indigenous plants upon the human body as Dr. John Harley, and his labours have received their due meed of praise on all sides, by the "old school" and by homœopaths alike. In a most interesting paper in the last volume of "St. Thomas's Hospital Reports," he places medicine under another obligation to him by a careful inquiry into the true qualities of one of our reputed poisonous plants—viz., fool's parsley. The sum of his investigations is that *æthusa cynapium* is a *harmless plant*, and he is unable to attribute any therapeutic influence to it. He was led to the pursuit of the subject in the hope that he might find qualities that could be turned to medicinal use. This somewhat disappointing conclusion, which is rigidly demonstrated, is evidently of great importance in a medico-legal point of view. For more than 300 years deadly qualities have been ascribed to the lesser hemlock, and, on the authority of Linnæus, Haller, and others, the "bright green livery of *æthusa*" has been always regarded with suspicion and sometimes with horror. At this day the little plant is found in every work on toxicology associated with the apparent victims of its reputed toxic power.

The first part of the paper is devoted to a critical and acute examination of sixteen recorded cases of reputed poisoning by *æthusa*; and we have only space to say that Dr. Harley clearly shows that the alleged symptoms in each case were due either to other plants than *æthusa*, or to some form of disease, such as enteric fever or pleuro-pneumonia. Accompanying the paper is a plate carefully drawn from nature, and representing, side-by-side, the leaves of *æthusa*, with the leaflets of the medicinal hemlock (*conium maculatum*). The resemblance is so close that even an accomplished botanist might be excused for confounding one with the other, and, in the dried leaves, the distinction would be almost impossible.

In the second part of the paper Dr. Harley turns from "this ungrateful task of criticism" to the more agreeable occupation of detailing the results of his own observations on the properties of *æthusa*. These were made with the juice of the entire plant, with tinctures prepared from both ripe and green fruit, with a fluid extract prepared with the view of separating any cynapine or other active principle that may have been left in the plant after the expression of the juice, and with the oleo-resin. Dr. Harley experimented with these preparations on himself and on others, and in no case did a trace of gastric irritation or any other effect,

immediate or subsequent, occur. The results, therefore, were merely negative. The slight contraction of the pupil observed in some cases was probably due to the stimulant effect of the alcohol in steadying an oscillating pupil.

The largest dose of the juice given was four ounces of the spirituous mixture, which is equivalent to three ounces of the fresh juice and to six ounces of the fresh herb—a quantity greater, according to the author, than was taken, or assumed to have been taken, in any of the quoted cases of poisoning. The maximum doses of the tincture of the *ripe* and *nearly ripe* fruit was a fluid ounce, equivalent, in either case, to 90 grains of the fruit.

The largest dose of the tincture of the *unripe* fruit was two fluid ounces, equivalent to more than 300 grains of the fruit.

Not the slightest evidence of the presence of either conia or cynapine in *æthusa* was elicited.

Dr. A. E. Hawkes, reviewing Harley's paper in the *British Journal of Homœopathy*, Jan., 1875, accepts the author's conclusions. He further states that all the symptoms attributed to *æthusa* in Hempel's "*Materia Medica*" are taken from reports of cases which Dr. Harley condemns as affording no evidence of poisoning by *æthusa cynapium*, and he suggests to his homœopathic brethren the advisability of striking out of their *materia medica* these symptoms. The editors append the following note, which we commend to our readers:—

"We have expunged the above symptoms from our symptomatology of *æthusa*, and recommend all practitioners to do the like. But it by no means follows that the plant is inert and destitute of medicinal power because Dr. Harley did not observe any very marked absolute symptom from a few trials to test its alleged poisonous properties.—Eds."

4. *Effects of Asparagus on the Urine*.—Hilger's researches show that asparagin does not exist in fresh urine, as Lehmann had said, and that it is decomposed by the organism into ammonia and succinic acid. After the use of asparagus, ammonia is always found in considerable quantity in recent urine, and succinic acid to a notable amount has also been detected in it. In addition, hippuric and benzoic acids are formed. The author was unable to determine the presence of the odorous principle in the product of distillation.—(*Journ. des Conn. Méd.*, 15 Aout, 1874.)

5. *A New Poultice*.—An ingenious French pharmacist, M. Lelièvre, proposes to supersede the old-fashioned and uncleanly

linseed meal poultice by a light and efficacious substitute, and a favourable report upon it has been made to the Académie de Médecine by M. Lefort. The new poultice is prepared by saturating two superposed layers of wadding with a solution of *fucus crispus*, and drying them in a stove after they have been submitted to strong pressure. In this way a sheet of the consistence of cardboard is produced, a portion of which is cut off when wanted, and soaked in hot water for fifteen or twenty minutes. This swells it out and fills its tissue with a mucilaginous fluid. It has been tried in several of the hospitals of Paris, to the great satisfaction of the surgeons and the patients, and it can be prepared in large quantities beforehand, as when it has once been dried it will keep for a long time without undergoing any alteration.

M. Gosselin has tried this cataplasim in his wards, and finds it to possess two advantages over a linseed poultice—viz., it does not dry up, and especially it does not slide off from the part to which it is applied, being sufficiently adherent to prevent its becoming displaced. M. Verneuil is also well satisfied with it. After twelve hours it is as fresh as when first put on, does not give rise to any bad smell, neither softens nor crumbles, and as it does not soil the parts or the linen, &c., it comes in contact with, it is both cleanly and economical. MM. Demarquay and Larrey believe that this emollient *fucus* will prove of valuable service in military hospitals and in ambulances, and M. Le Roy de Méricourt anticipates that it will be of great use in the navy. When these poultices can be produced on a large scale, they will probably be cheaper than linseed meal poultices.—(*Rev. de Thér. Med.-Chir.*, No. 1, 1875; *Pharm. Journ.*, Jan. 9, 1875.)

6. *Croton-Chloral*.—Dr. Engel (*Journ. de Ph. et de Chim.*, Oct., 1874) remarks that although this new drug has been the subject of numerous physiological experiments, but little is generally known of it from a chemical point of view. It is now prepared on the large scale in Berlin.

Constitution.—Ordinary chloral is an aldehyd, it is the hydride of trichloracetyl, $C_2HCl_3O.H$. Croton-chloral is the hydride of tri-chloro-crotonyl, $C_4H_2Cl_3O.H$ —i.e., the aldehyd of crotonic acid, $C_4H_5O.OH$, in the radical of which 3 atoms of hydrogen have been replaced by 3 atoms of chlorine.

Preparation.—Krämer and Pinner (*Annal. der Chem. und Pharm. B. CLVIII.*, s. 37) were the first to prepare croton-chloral

by passing a current of chlorine into aldehyd for twenty-four hours. The production of croton-chloral under these conditions is easily understood, since Kékulé has shown that aldehyd, under the influence of various saline solutions, and more easily still under that of hydrochloric acid, is condensed, with the elimination of water, into croton-aldehyd :— $2 \text{C}_2\text{H}_3\text{O.H} = \text{C}_4\text{H}_3\text{O.H} + \text{H}_2\text{O}$.

In the action of chlorine upon acetic aldehyd, a substitution is commenced in the latter, which results in the formation of hydrochloric acid. This acid determines, as has just been seen, the formation of croton-aldehyd, upon which the substitutive action of the chlorine then goes on. The formation of croton-chloral is thus readily explained.

Physical and Chemical Properties.—Anhydrous croton-chloral is a colourless oleaginous liquid, having a peculiar odour recalling that of ordinary chloral. It is insoluble in water, but, like ordinary chloral, it combines with water to form a crystallised hydrate. The hydrate of croton-chloral crystallises in white nacreous spangles. It is slightly soluble in cold water, more readily in warm water, and is very soluble in alcohol (Krämer and Pinner). It dissolves more readily in glycerin than in water (Jules Worms).

It is known that ordinary chloral decomposes, under the influence of caustic potash, into chloroform and formiate of potassium, $\text{C}_2\text{Cl}_3\text{O.H} + \text{KOH} = \text{CHO.OK} + \text{CHCl}_3.\text{Cl}$. Under the same influence, croton-chloral is decomposed into allyl-chloroform and formiate of potassium, $\text{C}_4\text{H}_2\text{Cl}_3\text{O.H} + \text{KOH} = \text{CHO.OK} + \text{C}_3\text{H}_3\text{Cl}_3.\text{Cl}$.

But allyl-chloroform is excessively unstable, and is immediately decomposed into hydrochloric acid and di-chlorallylene, $\text{C}_3\text{H}_3\text{Cl}_3.\text{Cl} = \text{HCl} + \text{C}_3\text{H}_2\text{Cl}_2$.

Physiological and Therapeutical Properties.—The observations of Liebreich and of others upon the mode of action and uses of croton-chloral, were given in the *Reports* for Aug., 1873, Feb., 1874, and Aug. 1874.

Dr. Jules Worms, after several experiments made with the view of rendering this drug less repugnant to the taste, recommends the following formula:—

Croton-chloral,	.	.	1 gram.
Glycerin,	.	.	60 grams.
Water,	.	.	60 „
Oil of peppermint,	.	.	3 drops.
Simple syrup,	.	.	25 grams.

In his first observations, Dr. Worms sought to test the hypnotic action only of the drug, without concerning himself with its asserted therapeutic efficacy in neuralgia of the fifth nerve. He administered it internally to 6 patients, 3 males and 3 females; and, in 2 women, he injected it subcutaneously. In the 3 cases in which it was administered to women, it completely failed. The first case was that of a woman in an advanced stage of uterine epithelioma, which had extended to the vagina and bladder, and gave rise to excruciating pains, which were sensibly mitigated by morphia hypodermically. 50 cgrm. ($7\frac{1}{4}$ grs.) of croton-chloral were given in sugar and water. No appreciable hypnotic effect was produced, and it was necessary to recur to the use of morphia. A similar dose on the day following induced vomiting in 3 or 4 minutes. The second patient, long the subject of hysteria, but not gastralgic, took, on 3 successive days, 50 cgrms. in 60 grms. of liquid, and each time she vomited the medicine. The third patient, who was affected with an intractable vulvo-ovarian neuralgia, took 50 cgrms. of croton-chloral. She vomited it, and was unable to retain food on her stomach for some days. In the 3 male cases the results were better marked. In 2 cases, 30 cgrms. of croton-chloral in 1 gm. of glycerin, were injected beneath the skin of the nates. Sharp pain followed the injection, but no evidence of hypnotism. In one case a considerable swelling, with a bright red zone more than two inches in extent round the puncture, was observed on the next day, and in the other case, a small eschar formed.—(*Rép. de Pharm.*, No 12, 1874.)

In photophobia.—Mr. Bader has tested croton-chloral in some cases of intolerance of light, but the results as stated in the brief notes of the cases do not appear to be very encouraging. Mr. Bader thinks that the only class which benefited by this drug were young people suffering from syphilitic corneo-iritis. The dose usually given was from 5 to 10 grs., and in one case, 20 grs. were administered 4 times a day without producing much effect for good or evil.—(*Med. Times and Gaz.*, Aug. 8, 1874.)

In megrim.—(See Dr. Sydney Ringer. *Brit. Med. Journ.*, Nov. 21, 1874.)

7. *Chloral*—*In Pharmacy*—Mr. R. Fairthorne suggests the subjoined formulæ, based on the considerable powers as a solvent which chloral possesses.

Glycerin affords a convenient agent for forming solutions with

chloral and the alkaloids, and the following will be found, when properly combined, to produce permanent and elegant preparations, viz.:—

Chloral Glycerite of Morphia.

R	Morphia (Powd.)	.	.	.	5 grains.
	Chloral hydrate	.	.	.	1 drachm.
	Glycerin	.	.	.	half a fluid ounce.

M. Sec. art.

Chloral Glycerite of Veratria.

R	Veratria	.	.	.	5 grains.
	Chloral hydrate	.	.	.	1 drachm.
	Glycerin	.	.	.	half a fluid ounce.

M. Sec. art.

Ointment of Chloral and Veratria.

(Corresponding in strength to the Ung. Veratriæ, U. S. P.)

R	Veratria	.	.	.	10 grains.
	Chloral hydrate	.	.	.	3i.
	Water	.	.	.	6 drops.
	Lard Ointment	.	.	.	half an ounce.

M. Sec. art.

Chloral Glycerite of Morphia and Camphor.

R	Morphia	.	.	.	5 grains.
	Chloral	.	.	.	} each 1 drachm.
	Camphor	.	.	.	
	Glycerin	.	.	.	half a fluid ounce

M.

Lotion of Chloral and Iodine.

R	Iodine	.	.	.	20 grains.
	Iodide of Potassium	.	.	.	6 grains.
	Glycerin	.	.	.	1 fluid ounce.
	Chloral hydrate	.	.	.	2 drachms.

M. Sec. art.

“Chloral can also be combined with collodion, in which it dissolves after the addition of a few drops of alcohol.”

A solution, consisting of 9 parts of hydrate of chloral and 3 of water, is capable of dissolving the following substances to the extent named:—

One grain of morphia is dissolved by a portion of the liquid containing 12 grs. of the hydrate; 1 grain of veratria by a portion containing 5 grs.; and 1 grain of atropia by a portion containing

20 grs. These substances should be mixed, in the state of powder, with the solvent, and heated by means of a water bath, with occasional agitation. The solutions thus made are in a convenient form for employment, either alone or when mixed with oils, ointments, or with glycerin. Camphor, too, is freely dissolved by them.—(*Phar. Jour.*, Dec. 26, from *Amer. Journ. of Pharm.*)

Action on the Blood.—Feltz and Ritter have made some interesting observations upon this subject, but which are too lengthy for insertion here. Their conclusions are quoted from the *Comptes Rendus*, Aug. 3, in *Rép. de Pharm.*, 10 Sept., and in *Lond. Med. Rec.*, Aug. 26.

Some months since M. Vulpian communicated to the Académie de Médecine the result of numerous experiments on the intravenous injections of chloral, which he had performed with the object of keeping the animals quiet, and so facilitating vivisections. In three instances out of sixty M. Vulpian has observed a very serious accident, which it behoves those surgeons who advocate the intra-venous injection of chloral in man to consider. In three dogs he found that considerable hæmaturia supervened during the injection. (Feltz and Ritter ascertained that the urine of dogs contained hæmatoglobin in solution after intra-venous injection of chloral). After death no lesion of the urethra, bladder, or ureters was found, but the bladder and ureters were full of blood, which was derived from the congested kidneys. This hæmaturia is produced by the rapid elimination of the chloral. M. Vulpian asks, and rightly so, may not the intravenous injection of this drug in man determine similar phenomena, and he is unable to recommend surgeons to practise such injections.—(*Journ. des Connaiss. Méd.*, 15 Juin, 1874).

In hydrophobia.—An interesting case is recorded in the *Rép. de Pharm.*, 10 Juillet, 1874, in which *thirty-three grammes* of hydrate of chloral (13 grms. at first and 20 grms. on the day following) were injected into the veins of a man, aged thirty-one, suffering from hydrophobia, which he had contracted from the bite of a dog six weeks previously. Each injection of chloral was followed by sound sleep, and the man died shortly after in a paroxysm of orthopnoea. The autopsy was made forty-eight hours after death, and general visceral congestion was noted. But, although the veins were minutely examined with great care, no trace of a thrombus or embolus was found.

The case is curious, as showing what a large quantity of an active and irritating drug can be introduced into the course of the circulation without inducing coagulation of the blood.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

Wednesday, February 10th, 1875.

HENRY KENNEDY, M.B., Vice-President, in the Chair.

MR. H. R. SWANZY (by permission of the Council) read a paper on *The Significance of "Congestion Papilla," or "Choked Disc," in Intra-cranial Disease.* [It will be found at p. 177.]

DR. MACSWINEY asked if there were any mode by which the situation of an intra-cranial tumour might be surmised during life. He understood Dr. Swanzy to say that an intra-cranial tumour, no matter where situated, would produce congestion papilla; and what he now desired to know was whether there was any way by which the diagnostician could arrive at the knowledge of the precise locality of the tumour—whether at the surface, in the interior, or at the base of the brain?

MR. SWANZY replied that by optical appearances it would never be possible to say in what part of the brain the tumour was situated. If the tumour involved some of the cranial nerves, and thereby produced symptoms of paralysis, its precise locality might be correctly surmised.

DR. GERALD F. YEO read a paper on *The Pathogeny of Hæmorrhagic Infarction of the Lungs.* [This paper will be found at page 183.]

DR. PURSER objected to Dr. Yeo's statement, that it was physiologically impossible that appearances, such as those described as pulmonary apoplexy, could be produced by blood being drawn into the air-cells in inspiratory effort. Sir Thomas Watson's case, in which the appearance found after death by suffocation caused by hæmorrhage from the lingual artery and entrance of blood into the air-passages, and in which there was no reason to suspect embolism, sufficiently proves the contrary. Sir

T. Watson also states that he has frequently seen similar appearances in cases of phthisis, where copious hæmoptysis occurred shortly before death. Dr. Purser had himself seen spots, indistinguishable by the naked eye, from pulmonary apoplexy, and in which the microscope showed the presence of blood not only in the smaller bronchi but also in the air-vessels, scattered through the lungs of a rabbit killed by hæmorrhage from the vessels of the neck while under chloroform, and in whom a large quantity of blood was drawn by convulsive inspiration into the trachea. While, therefore, fully admitting the explanation given by Virchow of the pathogeny of the hæmorrhagic nodule to be the true one, Dr. Purser maintained that the theory of Sir T. Watson was applicable to some instances.

DR. NIXON said that he could not agree with Dr. Yeo that it was necessary, in all cases of hæmorrhagic infarction or apoplexy, to assume the existence of embolic lesion. He believed that there were three conditions capable of producing pulmonary apoplexy. First, it occurred associated with diseases of the left side of the heart, especially constrictive disease of the mitral orifice. In these affections there was no *direct* obstruction to the circulation in the branches of the pulmonary artery, but an impeded outlet of blood through the pulmonary veins. The pulmonary capillaries being, on the one hand, freely supplied with blood from the right ventricle, and, on the other, imperfectly emptied by the obstructed outlet through the veins, it was reasonable to believe that under such conditions the delicate walls of these vessels give way, and a veritable hæmorrhage occurs into the tissue of the lung. It seemed impossible that here the capillaries and smaller blood-vessels would resist the increased intra-vascular pressure until the circulation through the right ventricle had become sufficiently retarded to permit of thrombosis and its secondary results taking place. Secondly, hæmorrhagic infarction occurred where there was a *direct* obstruction to the circulation in the pulmonary capillaries, in which cases, as there is diminished tension in the minute vessels, the view of hæmorrhage by rupture is untenable, and it can be explained only upon the embolic theory so well described by Dr. Yeo. There could be no doubt but that the slowed and enfeebled circulation through the right side of the heart generated a condition favourable for the coagulation of the blood amidst the muscular trabeculæ of the right ventricle and of the auricular appendix. In this instance hæmorrhage most likely takes place, as Dr. Purser mentioned, by *diapedesis*. Thirdly, a form of pulmonary apoplexy, analogous to the instance adduced by Dr. Purser and to Sir Thomas Watson's case, has been described in the recent edition of Drs. Wilks' and Moxon's work on Pathological Anatomy, under the name of the *spotted* condition of the lung. In deaths after hæmoptysis, or where the lung has been injured

by a fractured rib, the blood, being poured into the air-tubes, is drawn down during inspiration into the intercellular passages and air-vesicles. In this form the blood lies entirely within the air-passages; hence it is not met with, like the other forms of pulmonary apoplexy, in *circumscribed masses*. Dr. Nixon believed, then, that no single view as to the pathology of pulmonary infarction would be applicable in all cases where that condition is met with.

DR. YEO was glad to hear that Dr. Purser had himself observed the occurrence of hæmorrhagic infarction under the circumstances which he had mentioned, as he had the greatest respect for his powers of observation, and he might be prevented by this case from following a prejudice against this mode of production of hæmorrhagic infarction, which had led him into the error of believing it physiologically impossible. As far as Sir Thomas Watson's case went, however, he did not think that author had brought forward sufficient proof that the hæmorrhagic infarctions in his case did not depend on embolus. In the first place, the amount of air contained in the air-vessels made it difficult to understand how pulmonary apoplexy could be so suddenly caused by hæmorrhage into the bronchi, as described. When it was considered that only one-twentieth part of the air usually in the air-vesicles was changed during respiration, how could they be so completely filled with blood by one or two inspirations as to give the lung the solid appearance he described, for the boy died immediately after the blood entered the air-passages. In Sir Thomas Watson's case there was no difficulty in finding a source for the emboli, for surely the ulceration which had opened the lingual artery must have formed thrombi in the veins, which would afford ample material for the formation of small emboli. As well as he remembered, Sir Thomas Watson did not give any cases of phthisis in which pulmonary infarction followed bronchial hæmorrhage.

DR. ARTHUR WYNNE FOOT read a paper on *Dilatation of the Stomach*. [It will be found at page 192.]

The CHAIRMAN observed that the case was one of curious interest, and it was not possible to portray a case more ably and graphically than Dr. Foot had done.

DR. MACSWINEY asked Dr. Foot whether he had tried charcoal? There were several cases where large doses of charcoal had rapidly produced decided relief of the flatulence consequent on dyspepsia. He should also like to hear Dr. Foot's experience of bismuth, which was vaunted as being of the greatest value in arresting a tendency to gastric disturbances where acid secretions are poured out; and, finally, he wished

to know whether the patient had suffered from that excruciating and torturing pain which was generally attendant on cases of persistent distension of the stomach.

DR. FOOT replied that he used neither charcoal nor bismuth, because he thought the probable cause of suffering was paralysis of the stomach from distension. The patient did not suffer very great pain, his principal suffering being from heart-burn, and the pain and annoyance due to it.

DR. JOHN HUGHES said that three years ago he had a patient of the same age as Dr. Foot's, under his care, in the Mater Misericordiæ Hospital. The case was remarkable for incessant vomiting; it was acid, and on microscopic examination was found to contain sarcinæ and torulæ. The patient was wasted to an extreme degree. Every form of treatment was tried unsuccessfully. The distension was not so great as in Dr. Foot's case. At last he was put on hyposulphite of sodium, in doses of 20 grains up to 40 grains, three times a day, and in six months he got permanently well. He remained in the hospital afterwards for two years as a servant, got up condition, and was able to discharge his duties efficiently, and ultimately he went to America.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-SEVENTH ANNUAL SESSION.

Saturday, 13th February, 1876.

LOMBE ATTHILL, M.D., President, in the Chair.

DR. F. T. PORTER exhibited a specimen of a fibrous tumour which he said was of interest in this respect, that it was found quite free and unattached either to the Fallopian tubes or to the uterus. He had not heard or read of any similar case. He had heard of tumours attached to the uterus, and afterwards getting free. There was a tumour of smaller size at the other side, and a polypus attached to the os. The specimen was removed from the body of a woman fifty years of age.

The PRESIDENT said every one knew that fibrous tumours might be attached to the uterus by comparatively long pedicles, but here was one perfectly unattached. It was quite possible that it might have been originally attached to the uterus, but that the pedicle had been elongated and finally severed.

On Metro-peritonitis following the use of the Ordinary Female Syringe: a Plea for the Vaginal Irrigator. By THOMAS MORE MADDEN, M.D., M.R.I.A., lately Examiner in Midwifery and Diseases of Women in the Queen's University in Ireland; Physician to St. Joseph's Hospital for Sick Children; ex-Assistant Physician, Rotunda Lying-in Hospital; Corresponding Fellow of the Obstetrical Society of Edinburgh, and of the Gynæcological Society of Boston, &c., &c.

THE use of the vaginal syringe is the most common, and, until recently, was almost the only local treatment resorted to in uterine disorders. As this instrument is now so generally employed in all cases of real or suspected disease of the womb, that is to say, in nine-tenths of the complaints peculiar to women, and as it is freely ordered by medical men and habitually used by patients without any special caution or apprehension of possible danger, the following case appears to me not unworthy of the consideration of this Society:—

Mrs. W., a healthy young lady, aged twenty-four, was delivered on the 16th of July, 1874, of her first child. The labour, which was very tedious in the first stage, was rendered difficult by rigidity of the os-uteri and malposition of the child's head, and had to be completed with

the assistance of my long forceps, an instrument of a peculiar construction which I have elsewhere described.* Her convalescence presented nothing remarkable. On the 24th of August she called on me, complaining of pain in the back, a profuse yellow leucorrhœal discharge, and a distressing bearing-down sensation, which prevented her from walking or even standing with any comfort. The vagina was congested, the os patulous, and the uterus slightly prolapsed and enlarged. Absolute rest was enjoined, a tonic prescribed, and she was directed to use an astringent vaginal injection.

A few nights afterwards I was sent for, but being out of town, Dr. Egan, of Talbot-street, saw her, and found her suffering from intense uterine colic, which had come on during the use of the injection when going to bed a couple of hours previously. She was then cold, almost pulseless, and apparently semi-moribund. Having promptly administered stimulants, and applied sinapisms over the heart, &c., Dr. Egan, as he subsequently informed me, considered her condition so precarious, that he called in the assistance of Dr. Johnston, in consultation; and owing to the efficacious measures adopted, the most urgent symptoms were abated, the warmth was restored to the extremities, the pulse became apparent at the wrist, and the severe uterine pain was for the time considerably relieved.

(On the following morning I visited her with Dr. Egan, who kindly left the case in my care, and found her still in a state of extreme prostration, and again suffering from frequent paroxysms of violent uterine pain and almost continual retching, with great tenderness over the abdomen, and especially over the uterus, which was as large and hard as it should be immediately after delivery. Her pulse was 140, and so weak that it could hardly be counted; her respiration was sighing; countenance pale and anxious, and the skin cold and clammy.

Poultices and anodyne stupes were applied to the abdomen; hydrocyanic acid draughts were given to allay the retching, and her strength was supported by enemata of brandy and beef-tea, with small doses of liquor opii. I again saw her the same evening; the incessant sickness and uterine pain continued; she was suffering from constant thirst, but no sooner did she take any fluid, or even a piece of ice, than it was immediately rejected. She was therefore ordered to take nothing whatever by the mouth. A drop of hydrocyanic acid was added to each enema, and the expedient (which I have not seen alluded to by any writer) certainly diminished, though it did not stop, the vomiting. Notwithstanding the great depression of the pulse, the local uterine inflammation was so marked that I applied a few leeches over the seat of pain, and this gave considerable relief to the suffering, whilst the pulse actually

* Vide *Lancet*, June 20, 1874.

became feebler and less compressible than before their application. Besides this, the solution of muriate of morphia was used hypodermically to relieve pain and calm the nervous system, though no sleep was induced by it.

On the 31st the metro-peritoneal pain had in great measure subsided, but there was yet considerable tenderness over the uterus, which continued to be perceptibly tumefied. Her pulse was 140 in the minute, weak and compressible; tongue dry and furred; decubitus dorsal, and sunk down to the back of the bed, and she was still suffering much from the constant nausea and dry retching. The same treatment was pursued as on the previous day.

September 1st.—She had slept a little last night; her pulse had fallen to 120, and the uterine tenderness was much less than yesterday; the retching and inability to take any nourishment or medicine by the mouth, though less marked, still continued. I suggested a consultation. Dr. McClintock accordingly saw her with me that afternoon, and I had the satisfaction of having my view of the case confirmed by this eminent gynecologist, who, in addition to the treatment already referred to, advised oxalate of cerium, in small doses, every third hour, and Dr. Halahan's egg drink to check the retching.

September 2nd.—The egg drink, in teaspoonful doses, had agreed with her, and the oxalate of cerium pills, which at first had been rejected, were now retained; it was necessary, however, to continue the enemata, &c., as before, though she gradually improved each day until the 5th, when she was able to take a little iced chicken jelly by the mouth, and from this time her recovery was rapid, so that on the 11th she was able to sit up for a couple of hours, and was soon convalescent.

In the foregoing case the uterine colic and subsequent metro-peritonitis followed so immediately on the use of the vaginal syringe as to leave no room for any doubt of their being caused by the fluid having been injected through the patulous os into the uterus, and probably also by some of it having passed through an enlarged or dilated Fallopian tube into the peritoneal cavity.

The probability of an accident of this kind attending the use of the ordinary female syringe is practically ignored by the great majority of gynecologists; yet cases similar to mine, although somewhat rare, have been recorded by other practitioners; but they would appear to have made less impression on the minds of those engaged in this branch of medicine than the importance of the subject demands. Dr. Tilt says:—"Only once have I been led to believe that the patient injected some portion of the fluid into the cervical canal. A lady was suffering from chronic uterine inflammation; the womb was low and slightly retro-flected; the os uteri patulous; and after injecting a solution of acetate of lead, as the patient thought, in the usual way, she was suddenly

seized with severe uterine pains, rigors, and intense cold. She got better when in bed, by means of abdominal poultices and hot drinks, and no bad consequences followed this attack." ^a

Dr. J. H. Bennet says:—"When disease really exists in the uterine cavity, the injections would, no doubt, do much good, and, were they safe, would be preferable to the solid nitrate of silver applied with the porte-caustic; but there is reason to believe that uterine injections are not safe, and I do not now resort to them. Several deaths occurred in Paris, during my residence there, from metro-peritonitis, brought on by their use. One took place in the female ward of M. Jobert, in the Hospital St. Louis, and under my own care, as I was then his house-surgeon. The patient, a fine healthy young woman of twenty-four, was afflicted with a large fibrous tumour of the uterus, which had much developed that organ, and had, no doubt, opened the os internum. M. Jobert was at that time trying the effects of the so-called uterine injections, and injected one astringent injection into the cervical canal of this young female, there being a slight muco-purulent discharge from the os. Shortly after she was seized with rigors, fever, and severe abdominal pain, and in a few days died of peritonitis. I performed the *post-mortem* and found nothing but the lesions of peritonitis, and the ovarian tumour embedded in a womb developed to the size which it presents in the fourth month of pregnancy. The fluid of the injection must have penetrated freely into the uterus, through the open os, and thence have passed along the Fallopian tube into the cavity of the peritoneum, thus causing fatal peritonitis." ^b

M. Bernutz relates the history of a case of peritonitis "which resulted immediately from the administration of a cold vaginal douche." ^c

These three quotations are the only references that I have met with to the dangers which may follow the use of the ordinary vaginal syringe, and the paucity of similar observations is certainly a fair argument that the accident in question is by no means frequent. Still the mere possibility of such serious, or even fatal results, being thus produced, should, I think, render gynecologists more cautious than is generally the case in their recommendation of this almost universally-employed and much-abused instrument. For my own part, I have been long convinced of the inconvenience of the vaginal syringe in ordinary use, as well as of the possible ill effects of its misapplication. Some years ago I pointed out in this place how uncertain and undue might be the force with which injections can be thus thrown into the vagina or into the uterus, and I

^a Dr. Tilt's Handbook of Uterine Therapeutics. 3rd Edition, p. 54. London, 1868.

^b On Inflammation of the Uterus and its Appendages. By J. H. Bennet, M.D. 4th Edition, p. 146. London, 1861.

^c Clinical Memoirs on the Diseases of Women. By MM. Bernutz and Goupil. Translated by Dr. Meadows. Vol. II., p. 70. London, 1868.

endeavoured to show that, even when not positively injurious, this instrument must necessarily be imperfect in its action, and inconvenient in its use. To produce any permanent beneficial effect by injections, in a case of congestion or inflammation of the cervix uteri for instance, the injected fluid must be kept in contact with the inflamed or congested part for a certain fixed length of time, and at a certain unvarying degree of heat, without any sudden alternations in either its temperature or the force with which it is impelled. None of these intentions can be carried out when the common siphon syringe is made use of, as the fatigue of working that instrument, and the position of the patient, which is so irksome during its employment, effectually prevent its being used more than a few minutes continuously. Moreover, the injected fluid is sent by it into the vagina in irregular intermitting jets, the force of which is directed against the inflamed part with a degree of violence that may be injurious, or of weakness that may be utterly ineffective, and which is regulated by the strength or patience of the operator rather than by the necessities of the case. In order to obviate these difficulties, various forms of utero-vaginal syringes, douches, and irrigators have been devised. It may be in the recollection of some present that a couple of years ago I exhibited a very simple, and, I believe, very effective instrument for the same purpose before the Society. The irrigator in question* (a description and drawing of which may be seen in the second volume of our Proceedings, p. 183), is one I have now used for some years, and which, without asserting that it is in any way superior to other instruments of the same kind, I have found more generally useful than the ordinary syringe. With this irrigator, the accident which forms the subject of the present paper could not have occurred, as it is merely a siphon, so constructed that it can be set in action or stopped in an instant, at the will of the patient.

It has, moreover, the great advantage of being very portable, may be readily used whenever a vessel of water can be obtained, is capable of sending a gentle continuous current of water, plain or medicated, and at any temperature, into the vagina, or even into the uterine cavity itself, if ever that measure—rarely required in gynaecological, as distinguished from obstetric practice—should be considered expedient, and this, too, in any position, sitting or recumbent, and for any length of time that may be advisable, without causing the slightest fatigue to the patient. The advantages of the irrigator over the common syringe I have proved by experience during the last few years, and the comfort and benefit which those patients who have employed it have derived from its use would lead me to recommend any gynaecologist who has not hitherto done so, to give a trial to the irrigator as a substitute for the vaginal syringe in most

* Made by Whyte, Upper Sackville-street, Dublin.

cases. This instrument is not only effective and easily used, but is also easily constructed. Dr. Graily Hewitt, Dr. Kidd, and several others, have recommended and devised irrigators which many would, perhaps, prefer to the one I have brought before this Society. But it is in the power of any one to convert an ordinary vaginal syringe into an excellent irrigator by the mere addition of two pieces of india-rubber tubing and a small stop-cock to it. These may be attached to any syringe, which may be thus made perhaps fully as effectual as the most complicated instrument that could be devised for the purpose.

In another point of view cases, such as those just referred to, appear to me of some interest—namely, as to their bearing on the recent discussion as to the safety of strong astringent injections into the uterus immediately after delivery, in order to arrest hæmorrhage. Against this practice it has been urged that there is danger of forcing the injected fluid through the open uterine sinuses into the circulation, or through the Fallopian tubes into the peritoneal cavity, thus causing, in the former case, death from embolism, and in the latter giving rise to fatal peritonitis. As on a former occasion, when this subject was under the consideration of the Obstetrical Society, I expressed a strong opinion against the probability of such an accident being thus produced, I feel bound to say that the case I have now related has, to some extent, modified my views on this point. For if metro-peritonitis may be occasioned, as it was in this instance, by a fluid injected into the uterus five weeks after delivery, it is obviously much more probable that a similar effect might be thus occasioned immediately after parturition, when the uterine vessels and passages are so enlarged and pervious. But I should also add that the possibility of such an accident does not in the least alter my opinion of the utility of the powerful styptic brought into midwifery practice by Dr. Barnes, nor would it deter me from again resorting to the injection of the solution of perchloride of iron in any case of *post-partum* hæmorrhage which could not be otherwise controlled.

The PRESIDENT observed that Dr. Madden's brief paper opened up a very important subject for discussion. He did not think the occurrence of uterine colic following the injection of fluids by the syringe, was a very rare occurrence, inasmuch as he had seen three cases of it in his own practice. In one case only a few drops of glycerin were injected into the cavity of the uterus, as recommended by Dr. Marion Sims, and it produced most intense colic, but no peritonitis or endo-metritis followed. Some two years ago he was called, late at night, to see a patient whom he had directed to use a weak solution of borax injected into the vagina with an ordinary syringe. He found her in a state of collapse, suffering from pain referred to the uterus and sickness of stomach. Her symptoms were speedily relieved, and no inflammation followed; while a less severe

attack occurred in a patient who used tepid water only. He thought these cases, in which the injection of a fluid into the uterus was followed by colic, were far from being of very rare occurrence, and he advised that the central hole in the nozzle of the syringe be stopped, as a means of preventing this accident. He did not think, however, that the data given by Dr. Madden carried out his theory that the fluid passed into the Fallopian tubes, and thence into the peritoneum. The phenomena in Dr. Madden's case might be explained by the occurrence of a severe attack of endometritis in the first instance, followed by peritonitis. The exact same train of symptoms which Dr. Madden had described—the prostration, collapse and vomiting—occurred in a patient where he (the President) had swabbed out the uterus with perchloride of iron. The patient was suffering from profuse hæmorrhage, occurring some weeks after abortion; the os was patulous, and he had no difficulty in passing a pledget of cotton, saturated with the styptic, into the uterus; this was followed by a train of symptoms exactly similar to those Dr. Madden had described, but it was impossible that the fluid was passed through the Fallopian tubes. Certainly, Dr. Madden was quite right in saying that vaginal injections were not perfectly free from danger. He (the President) greatly preferred a douche, similar to that spoken of by Dr. Madden, to the use of a vaginal syringe, and he had recently (acting on a suggestion of Dr. Emmett, of New York) carried out that plan extensively. Dr. Emmett advocated strongly this vaginal irrigation with water, varying from 95° to 105° of temperature. He based his treatment on the analogy that existed between the effects produced by it and an ordinary linseed poultice, or other hot application, applied to the skin. He says:—If you leave a linseed poultice on for some time, the skin becomes corrugated and white, showing that, though the first effect of the warmth was to attract the blood to the surface, this was followed by contraction and diminution in size of the calibre of the blood vessels. He (the President) did not think this analogy held good, for, in the case of the application of a poultice, four or five hours elapsed before bloodlessness of the part occurred, while the vaginal douche could hardly be prolonged over fifteen or twenty minutes. Therefore, although considerable benefit followed in many cases from the hot vaginal douche, he did not think the theory was not quite correct. To use the vaginal douche efficiently it was necessary that the hips be raised higher than the shoulders, so that the vagina may be distended with the fluid; that the stream of fluid should be continuous, and that it should be kept up to an equal temperature. He (the President) had tested this method extensively. In a case of metritis, where the temperature of the water was raised to 110°, the patient derived much benefit. In another, a case of vaginitis, the patient had been subjected previously to treatment of various kinds without benefit. Two gallons of water, temperature 105°, were used twice daily.

She derived the greatest relief, and was, in fact, cured by it. The great difficulty in carrying out this treatment, where a large quantity of water necessarily is used, was that the bed-pan on which the patient lay had to be emptied constantly. To obviate that difficulty he had introduced the plan of attaching a tube to a bed-pan of peculiar shape, by which means the water was carried away. The pan must be placed on a firm surface, and, if this precaution is taken, no trouble whatever is experienced in using it. The water for the douche should be contained in a case such as that used by surgeons for irrigation, and be raised to the height of a few feet above the level of the couch or table on which the patient rests. The President exhibited the apparatus, which was of very simple construction.*

DR. JOHNSTON said he thought Dr. Madden was under a mistake in mentioning his name, as he did not remember having been called in to see the case.

DR. KIDD said uterine colic, following vaginal injection, was not an uncommon event. Patients will use vaginal injection for weeks without suffering any inconvenience, and then it sometimes happened that they got colic. As a rule it came on almost while the injection was being used, but sometimes it would not come on for a considerable interval. He had never seen it followed by any inflammatory attack. It produced a good deal of pain and, sometimes, collapse, but stimulants and anodynes generally relieved the patient. It had always seemed to him that these cases arose from some of the fluid getting into the uterus from the tube, and, like the President, he had sometimes desired the parties to have the central aperture closed. On the other hand, if the central aperture were plugged, the plug was likely to be shot out by the injection. He believed that an easier way of preventing the accident was to direct the patient to put the tube up the vagina as far as can be done, and then withdraw the tube a short distance. So far as his experience went these cases occurred principally where the os was patulous, and there was marked retroflexion of the uterus. A very eminent medical gentleman told him that he never saw uterine colic occur when he had used a warm injection, but that he had seen it frequently occur after cold injection. He did not see the analogy between uterine colic and any condition that might occur from the injection of perchloride of iron after delivery.

DR. MACSWINEY said they had heard a valuable discussion respecting uterine colic, but he thought Dr. Madden referred to something else. He, Dr. Madden, related a case in which he detected the existence of inflammation of the peritoneum. It was well known to most persons

* Made by Fletcher and Philipson, 10, Lower Baggot-street, Dublin.

that the introduction of the finger into the uterus may produce uterine colic, but he should like to know whether it was in the experience of obstetricians that inflammation of the peritoneum could be produced by the injection into it of water hot or cold. It must be admitted there were few cases recorded in which serious inflammation, extending over days, was produced by the use of an irritating vaginal injection.

DR. DARBY was under the impression that it was physiologically impossible to inject any fluid by the vagina and uterus through the Fallopian tubes into the cavity of the abdomen. They all knew that uterine cramp and metritis were not uncommon, and they also knew it was not an unusual practice of late to inject perchloride of iron to check hæmorrhage. In such cases he considered it would be an error to assume that the uterine colic was a consequence of the injection. He should rather say that it occurred as a coincidence, and that metritis was due to some other cause.

DR. M'CLINTOCK said the communication of Dr. More Madden raised an important practical question. Every one who had dabbled in gynæcology thought he was perfectly safe in practising vaginal injection. Dr. Madden, however, had given them another instance of what they were all familiar with, that the simplest remedies and operations, apparently the safest, will in rare and exceptional cases prove highly injurious or even dangerous to life; and instances might be given where even a small incision had been followed by death. But the occurrence of such rare instances ought not to deter us from the use of any remedy, whether surgical or therapeutical. They could not speak positively as to the cause of the alarming symptoms described by Dr. Madden. They never could know whether any of the fluid went into the cavity of the uterus or not. All they could say was that such was possible, and, in Dr. Madden's case, the circumstances were highly favourable for the entrance of the fluid into the uterine cavity, as the lady had only been three weeks confined, the os was patulous, and the uterus prolapsed. Hitherto he (Dr. M'Clintock) had been in the habit of telling his patients that they might use the syringe freely, and that it could not do any possible harm; but now he saw such a direction would not be always a safe one. He had seen sharp pain follow an injection, but no serious consequences. He could quite understand that when the injection was introduced cold it might be injurious, and he had generally told his patients to use it tepid and gradually reduce the temperature. He had had an opportunity of seeing the case which Dr. Madden had brought under their notice, and he agreed in Dr. Madden's diagnosis. There was no doubt whatever but that she had a dangerous attack of metro-peritonitis following the use of the injection, and evidently produced by it. The case was, therefore, very striking and remarkable, and should be kept before their recollection.

DR. FITZPATRICK said he had been using the syringe for many years, and was he now to be deterred by the narration of Dr. Madden from continuing to employ that valuable instrument? Of course, it was important to use an instrument properly adapted to the purpose in view. The orifice ought to be at the side, and not at the end of the tube.

The PRESIDENT repeated that a patient, who was under his care not long ago, was ordered to use a syringe, and on one occasion, while in the act of using it, was seized with intense pain, and exhibited the usual symptoms of uterine colic. When he saw her she was in great pain, and yet there was no tenderness on pressure; the attack was non-inflammatory, and passed off in a few hours, the symptoms being relieved by appropriate treatment. The President, after briefly alluding to the other cases which had come under his observation, in one of which uterine colic had been produced by the injection of a few drops of glycerin, expressed his opinion that they had not diverged from the question; because the subject of Dr. Madden's paper was uterine colic followed by metritis, and not metritis alone. He also stated that he fully concurred with Dr. Kidd and Dr. M'Clintock, that cold water for vaginal injections was objectionable.

DR. MORE MADDEN said he had only to express his gratification that his brief paper had led to so lengthened and interesting a discussion. The President had related cases of great importance bearing out his views, the only difference being that in his (Dr. Madden's) case, as Dr. MacSwiney had observed, peritonitis followed, the fluid having passed from the uterus into the peritoneal cavity. With regard to irrigation, various forms of irrigators had been used. In addition to the very ingenious and, in many respects, very valuable apparatus shown by the President that evening, he (Dr. Madden) had exhibited an instrument for the same purpose two years ago, and others had done the same. As to Dr. Kidd's observation, that these cases of uterine colic arose from retroflexions of the uterus, he could assure him that there was no such thing in the present case. The patient had been carefully examined by Dr. M'Clintock and himself, and there was no displacement of the uterus. Dr. Fitzpatrick declined to give up the use of the syringe, but that was, of course, a matter for his own consideration. Dr. M'Clintock had most succinctly summed up the object of his paper, which was to show that in certain cases the vaginal syringe was not so desirable an instrument as it was often supposed to be, that it might give rise to unpleasant symptoms, and that in the majority of cases the use of the irrigator was preferable to it.

The Society then adjourned.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

President—CHARLES D. PURDON, M.D.

Honorary Secretary—J. J. CHARLES, M.D.

Report on a Case of Syme's Amputation of Foot, following Removal of Necrosed Bone by means of the Gouge. By JOHN FAGAN, F.R.C.S.I.

THERE are some features in the case which I have just now presented to you, Mr. President, which I consider sufficiently interesting to induce me to lay the particulars of it before this Society:—

R. M'C., aged eleven years, was admitted on the 24th February, 1874, under my care, to the Belfast Hospital for Sick Children.

He suffered from chronic sub-acute inflammation of ankle-joint and tarsal bones of left foot, which presented the characteristic appearances found in such affections. The contour of the joint was destroyed by the inflammatory thickening of the surrounding tissues, the integument glazed, and here and there of a purplish colour; three or four sinuses gave out an unhealthy discharge, one of which led down to a piece of necrosed bone on the back of the astragalus.

The history I got from the lad was, that about a year previously, while running on the street, he fell, and knocked his ankle against the corner of the curbstone; he suffered great pain at the time, and in a few days had to take to his bed, where he remained for some weeks. After a time he began to walk on it, but it still kept tender, and a couple of months before I saw him it began to assume the appearance it had on admission.

After keeping him in hospital for about five weeks, without much benefit from the treatment employed, I determined (with the concurrence of my colleagues) on removing the piece of necrosed bone; and accordingly, on the 2nd March, after applying Esmarch's elastic band, and putting him under chloroform, I made a deep incision, about one inch and a quarter long, over the necrosed bone. The parts were perfectly bloodless, but a clear serous fluid oozed in pretty large quantity from the morbidly thickened tissues; I then applied the gouge, and removed what I considered necessary; in doing so I felt the bone very soft and friable. The wound was then washed out with a weak solution of carbolic acid, a pledget of lint left in it, and cold lotion applied. The next day the pain in the foot was intense. He got an opiate, and had water dressing applied. The edges of the wound now began to gape and look unhealthy, and in a few days began to slough; charcoal poultices were applied, and he got his opiate three times daily.

The sixth day after the operation he had a rigor, the foot became enormously swollen and inflamed, and an abscess pointed anterior to the external malleolus, which I opened, giving exit to a large quantity of purulent matter.

This only wrought temporary relief. The foot was still exquisitely painful to the touch; large exuberant granulations, which bled freely on the slightest provocation, filled up the wounds, and an ichorous discharge, filled with fat globules, kept constantly oozing from them.

As he now began to suffer from hectic, loss of appetite, and sleeplessness, I considered it necessary to remove the foot, but the mother not consenting to the operation the boy was taken home. After keeping him for about a fortnight she took him back again, and on the 25th May I performed Syme's amputation, assisted by my colleague, Dr. Brice Smyth, and our consulting surgeon, Dr. Browne. There was some oozing through the dressings, but not sufficient to cause any alarm; during the day he took plenty of milk, and slept well that night. I put him on the following mixture, which I am in the habit of using after operations:—

Bicarbonate of soda,	.	180 grains.
Dandelion juice,	.	4 drachms.
Water to	.	8 ounces. Mix.

Sign. No. 1.

Sulphate of quinine,	.	8 grains.
Tartaric acid,	.	120 grains.
Water to	.	4 ounces. Mix.

Sign. No. 2.

Two tablespoonfuls of No. 1 to be taken with one of No. 2 during effervescence.

I find this mixture to be extremely grateful to the patient, while its febrifuge properties I believe to be most beneficial at the time. With the taking of it the temperature and pulse were lowered, the tongue began to clean, and the bowels were gently acted on.

On the third day after the operation I removed the dressings; the wound looked healthy; there was slight discharge of healthy pus; after being well syringed with a solution of carbolic acid the stump was again dressed as at first. This process was gone through daily for about three weeks.

At the end of a fortnight the ligatures came away, and new skin began to bridge over the wound here and there. In three weeks the wound was healed over except at either extremity, where there was a pretty free discharge of pus oozing through exuberant granulations. I began to touch these with nitrate of silver, and applied pressure to them by means of wet strips of lint.

After a short time they were very much improved, and he left the hospital a little over a month after the operation.

There are several points in this case, Mr. President, that to my mind are of some interest, and well worthy of consideration. The first is the propriety of interfering by operative procedure; and, if such be considered advisable, what are the next means to be adopted?

In this case the disease was of considerable standing, the inflammation set up at first by the violence of the fall in the synovial lining of the joints, spread, and involved the bone tissue. If properly treated at first, the result in all probability would not have followed, but circumstances were not in the boy's favour; he was poor and ill-cared for; and had he even got the proper advice, he had not the means of carrying it into effect.

Now I believe that in such affections as the one I have just described, and indeed in all chronic diseases of bones and joints, our line of procedure must be very much influenced by the circumstances of individual cases, and what might be considered injudicious and bad practice in one set of cases would be the best in another.

In cases similar to the one under consideration I believe we are justified in resorting to operative means, after giving a fair trial to a milder line of treatment, and such I consider in its true sense "conservative surgery." The course usually taken by such cases is, that after spending a considerable time in one hospital or another—in some cases, perhaps, with benefit—they go home for a time, only to return again with the disease more extended, and demanding greater sacrifice of parts than if operated on in the first instance. Among patients belonging to the more favoured classes of society such a course of practice, for obvious reasons, should be the exception.

In considering the means to be adopted when resolved on interfering, let me say that had I a similar case again under my care I would not follow the same line of treatment. The operation of gouging diseased bone is, I think, too lightly recommended, and from what I have seen of it in the practice of others, and experienced in my own, I venture to hope that in course of time the museum will be considered a fitter place for the gouge than in the hands of the surgeon. I look on the operation as at once unsatisfactory, clumsy, and unscientific, possessing few redeeming features, but a great many to condemn it.

As usually performed it is a process of digging in the dark, there is no precision in it, and if one succeeds in his object of removing the diseased part it is generally at the expense of a much larger portion than very soon dies; or if, as in the case under consideration, the disease be seated in one of the short bones, the destruction of one or more in its neighbourhood. Some will say that this wholesale condemnation of the gouge is not warranted, seeing that it is still in such general use by the most dis-

tinguished surgeons, and that there are certain localities where disease is seated in bones that cannot be reached so effectually by any other means.

I grant that cases do now and then occur requiring the use of the gouge, but I hope to see such improvements in surgical appliances that diseases of bones will be dealt with with the same precision as those in the softer structures, and that when mechanical means fail medicinal applications will come to the aid of the surgeon, and will enable him to lay aside so clumsy and unscientific an instrument.

There were a few other points in this case, Mr. President, that struck me as interesting. You will observe by looking at the parts removed that the lower ends of the tibia and fibula were in a highly inflammatory state, and, notwithstanding, the case progressed most favourably after the great exciting cause was removed.

The flabby granulations at the extremities of the wound, and the formation of several small abscesses about the stump, resulted from the breaking down of the unhealthy pulpy tissue that remained in the flap after the amputation. As much as possible of this substance should, I believe, be removed at the time of the operation.

In performing the operation there are two points that specially claim the attention of the operator, and which, if carefully looked to, will prevent that unpleasant and comparatively frequent result—sloughing of the flap. The first is, when making the incision across the sole of the foot, after entering your knife over the inner malleolus, to give it a sweep forward, and by this means preserve as much as possible of the plantar vessels; the next is, when reflecting the heel flap, to keep as close to the bone as possible—in fact, to scrape the tissues from the bone, and by this means the small muscular branches are preserved intact. I had occasion to tie but two vessels, the anterior tibial and peroneal, and although the posterior tibial was visibly pulsating on the face of the flap, I could not make out its cut end, and did not like to disturb the parts looking for it when there was no hæmorrhage.

This fact is a proof of how simply sometimes a large artery can be sealed up, and so far advocates the method of torsion which is now getting into such deserved repute. The stump is now, as you have seen, in a condition to bear nearly the whole weight of the body, and with a properly constructed boot the boy will experience comparatively little inconvenience from the loss of the foot.

JAMES MOORE, M.D., said the stump they had just seen was an excellent one, and reflected credit on the operator. He did not approve of the gouge unless in exceptional instances.

J. J. CHARLES, M.D., thought the case before them was one of caries rather than of necrosis. He could not agree with the reader of the paper

in his universal condemnation of the gouge. He believed the best surgeons would give it a trial before proceeding to amputate the foot—more especially if the patient was of a healthy constitution, and the caries confined to a limited area, say one of the tarsal bones. He thought it a good rule, in such cases, to expose the diseased part fully by free incisions. Not to be hypercritical, he might mention that some surgeons would have preferred in this case excision of the astragalus, or of the ankle-joint, or Pirogoff's operation, since the os calcis was quite healthy. But, under all the circumstances, perhaps Syme's operation was the best.

The PRESIDENT stated that there are cases in which the gouge is the most judicious plan of treatment for caries. He referred to Mr. Solly's opinion in favour of the use of the gouge.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Cancer of the Uterus and Liver.—DR. FINNY :—These well-marked examples of cancer of the uterus and the liver were taken from the body of a subject in the adjoining dissecting-room, and, although they lack any clinical history, the disease is sufficiently well marked, and its progress, as we can easily imagine, so well shown, as to make the specimens worth showing to the Society. The disease, I should say, commenced in the uterus, and, as is usual with cancerous degeneration, began in the cervix uteri. The surface of the os was eaten away ; the disease then extended to the wall of the vagina, and, through the vagina, into the surface of the bladder, although the urinary canal is untouched. The uterus was firmly adherent to the pelvis, in which it lay, and the ovaries and rectum were adherent to the fundus of the uterus. The rectum, however, is free from the disease, although there is a slight constriction of it. It is the liver, however, which I wish particularly to exhibit, inasmuch as it presents so good an example of the cancer known as Farre's tubercle. The cancerous masses are formed in various situations, and, from the more central parts, have made their way to the surface of the liver, presenting, as will be seen, that cup-like appearance, characteristic of this form of cancer. The spleen was unaffected, as is the ordinary feature in these cases, as splenic enlargement is rare in hepatic cancer. I carefully examined the left lung, but failed to find any cancerous nodules either in the lung or in the mediastina. The right pleural cavity was filled with serum, pressing the diaphragm on the liver ; but I cannot say whether the effusion was in any way due to the neighbouring cancer. The case is interesting in exhibiting both the result of disease and the order of sequence which we believe existed.—*December 12, 1874.*

Strangulated Femoral Hernia.—DR. E. H. BENNETT presented a specimen of strangulated femoral hernia, which had caused death. He said :—The subject of this disease, Margaret R., aged sixty-two, was admitted to hospital on Sunday, 20th September, 1874, suffering from vomiting and constipation.

She said that she had had a hard day's work two days before, and a

long walk home, after which she felt sick, and found an old swelling in her groin much enlarged. She had on many previous occasions suffered in the same way, but had always obtained relief by rest in bed. She had tried this remedy, without relief, all Saturday, and until late on Sunday evening.

On her admission, an enema was given, and an effort was made to reduce a moderate-sized hernial tumour, found to exist in the right thigh. As but little effect, if any, was produced by the efforts at reduction, it was determined to await the action of the enema. A warm poultice was applied to the abdomen, and presently the enema came away with some feculent matter. She complained of but little pain, and soon fell asleep.

On 21st (Monday), she was in much the same condition as on the previous night. The tumour slightly larger, but still irreducible, free from tenderness. The abdomen also free from tenderness, although distended. She vomited occasionally, and had no motion from the bowels.

Her pulse was quiet, and she declared that she would be quite right if let alone, and allowed to go to sleep.

Ice was applied to the tumour, and a grain of opium ordered to be given every third hour.

A sensible diminution in the size of the tumour had taken place at 4 p.m., and the other symptoms were less urgent. She objected to the discomfort of the ice, and desired a poultice in its place. A light poultice, sprinkled with laudanum, was applied.

Next morning the symptoms were but little altered, the pulse only had risen slightly.

A consultation was held, and it was resolved to make another effort at reduction, before undertaking any operation. The woman was placed in a warm bath, and the taxis fully tried. Again a slight reduction in size took place, but the entire tumour could not be returned. During the efforts at reduction, faintness from the prolonged action of the bath so much relaxed the parts that it was difficult to resist the inference that the tumour was irreducible from adhesion of its contents to the sac—an idea suggested by its previous diminution in size, without complete reduction, and by its history.

The patient had never worn a truss, and could not tell whether the tumour ever completely disappeared, although she was distinct in her statement that she had often suffered on previous occasions from symptoms similar to those now present.

On the morning of 23rd (Wednesday), her pulse was found to be rapid, and the vomiting more urgent, the tumour harder, and slightly tender. The abdomen was free from pain on pressure, although she complained of its tension. The coils of intestine could be distinctly felt through its walls. She was evidently fully under the influence of opium. A

consultation was held, and it was resolved that no further delay should be made before operating.

Chloroform having been given, I cut down on the tumour. On attempting to open what I judged to be the hernial sac, a drop of semi-purulent fluid appeared in the groove of the director, escaping from a small cavity that seemed to be formed by adhesion between the sac and intestine. I at once changed the plan of operation, and divided the stricture (Gimbernat's ligament) externally to the sac. Immediately on doing so, the tumour, though its walls remained somewhat thick, subsided. The patient was removed to bed, the wound being dressed in the ordinary way.

The vomiting continued after the patient had recovered from the action of the chloroform up to 4 p.m. The pulse was then, as before, rapid—120, and the temperature 100° F.

The pills of opium having been given during the day, and the vomiting continuing notwithstanding, they were discontinued, and effervescing draughts, with prussic acid, were ordered instead. The pulse fell late at night to 100.

On 24th the vomiting had ceased, the cessation apparently following a draught given at 4 a.m. She drank a good deal of milk and iced water, without any return of vomiting until noon.

The pills of opium were given at intervals of six hours, and she had a nutritive enema injected. She slept a good deal.

On 25th, pulse 120; temp. 100°·5 F.; vomiting again urgent. She craved for bitter beer, and this was at once given, the pills being stopped; she retained the beer for some time, and slept on and off all day. Any time she was roused or moved the vomiting was provoked. The intestines could be felt in coils, and the abdomen was distended, but it was free from tenderness on pressure. She lay with the limbs extended.

At 4 p.m. she passed urine without notice, and the bowels were shortly after moved. Diarrhoea continued during the night, and a great quantity of fluid fæces was passed. On the morning of the 26th she became unable to swallow, but rallied for a short time after a subcutaneous injection of sulphuric ether. After this she was able to swallow brandy and milk, but sank rapidly about noon.

The *post-mortem* examination showed that the abdomen was entirely free from peritonitis, and that, though still rather full, the intestines had been in great measure emptied by the diarrhoea. A deeply-congested loop of intestine was found in the sac adherent to the anterior and lateral parts of the sac, and to its neck. At the neck the adhesions completely divided the sac from the abdominal cavity. A small cavity existed in the lower part of the sac, in which a discoloured purulent fluid lay; the opening made during the operation into the sac was easily found, penetrating into the thickest part of the adhesion between the sac and the

intestine. The loop of intestine contained in the tumour was part of the ileum, not far from its termination in the colon. The loop passed into the mouth of the sac at its right side, and turned from right to left in the sac, escaping from the neck to the posterior and left side of the entering extremity. Thus the loop was placed in the sac, so that the normal relation of its ends to each other was reversed. The seat of stricture was marked on the outside of each end of the loop by a line of deep colour seated well within the level of the adhesions at the mouth of the sac. On opening the intestine it was evident that the intestinal loop had long been contained in the sac and fixed within it; the openings were separated by a valvular spur formed by the mesenteric side of the loop, so altered in structure that it had assumed the appearance described by Dupuytren as the essential characteristic of this part in cases of artificial anus. One point further of importance was revealed by the examination—the mucous membrane of the intestine was ulcerated around the entire circumference of the upper opening into the hernial loop. This ulceration corresponded to the dark line marking the strangulation externally. It is probable that the extent and depth of this ulceration had so far weakened the action of the intestine that it was with difficulty able to overcome the obstruction afforded by the position of the loop of intestine, and that the persistence of the vomiting was in great measure due to the intestine failing to transmit its contents through the loop, even after the obstruction caused by the femoral ring had been removed. The absence of any trace of recent peritonitis, local or general, in the abdomen, is remarkable, and would appear to be due to the fact that the stricture was divided externally to the sac, and that the intestine was not reduced, but only its contents. Had the sac been opened and the separation of the adhesions effected, and the intestine reduced, peritonitis would have, in all probability, been added to the troubles caused by the intestinal obstruction, without any relief of them, for the condition of the loop could not have been altered, nor the ring of ulceration cured by reduction. Perhaps an operation performed on the day of admission might have placed the patient in a position more favourable to recovery, economising her strength, and so preventing a death by simple asthenia; but, on the other hand, few surgeons would urge hasty operation in the absence of any symptoms, except those of obstruction alone, while many symptoms pointed to the conditions being those of an irreducible hernia, as the *post-mortem* proves this to have been.—*December 12, 1874.*

Retained Ovum.—DR. M'CLINTOCK said:—I have here a morbid human ovum, of about two months' growth. It does not present any very special or remarkable features differing from what we commonly find in morbid ova at this period of uterine gestation. However, there are some circum-

stances connected with the clinical history of this preparation which are worthy of notice. Let me first mention, however, that we have here the uterine layer of the decidua, called by Hunter the decidua vera, which is seldom seen in these early abortions. The substance of the ovum has undergone a good deal of degeneration. It is thickened and indurated. The villous and shaggy condition of the chorion is entirely destroyed, and, interiorly, it presents a taberculated appearance—a condition that is not uncommon, and which has been delineated very well by Dr. Granville in his “Graphic Illustrations of Abortion.” On examining this specimen, when it was recent, there was no appearance of an embryo. There is something like the remains of an umbilical cord, but no appearance of a fœtus. The chief interest connected with this preparation is its clinical history. I have said this was a conception of two months’ development; nevertheless the patient who expelled it was seven months pregnant—and, paradoxical though it may appear, although she was pregnant seven months, she might with truth have been said never to have been with child, for the ovum seems to have been addled from the outset, the process of fœtal development having been arrested at a very early stage, and before there was any real growth of the embryo. The lady conceived about the 12th of November last year. When about six or eight weeks pregnant she got a severe fright, had some threatening of a miscarriage, and all symptoms of pregnancy then disappeared. Yet the blighted ovum was carried in the uterus for five months, and, at the end of seven months from the date of conception, it was cast off. During these five months the symptoms she presented were these—viz., a constant bloody discharge from the vagina, increasing considerably at the menstrual epoch. Her health gave way from the continual sanguineous loss and confinement to the house, though at no time was there any symptom of septicæmia, nor was there at any time any fœtor or putridity of the discharge from the vagina. In any case at all similar to this the practitioner should carefully avoid expressing any opinion as to the date of conception.—*December 12, 1874.*

Sarcoma of the Ovary.—DR. ATTHILL said:—The specimen which I now exhibit is an example of sarcoma of the left ovary. The patient from whom it was taken had been an inmate of the Adelaide Hospital. She stated that, for some months previously to her admission, she was subject to frequent attacks of abdominal pain, and had some time since recognised a well-marked tumour in the abdomen. She also suffered from menorrhagia. She was forty-five years of age. On admission, a large tumour could be distinctly felt lying a little to the right of the mesian line of the abdomen. It extended to within an inch of the umbilicus, and dipped down into the pelvis. Handling caused some pain. On making a vaginal examination, a firm and irregular mass could be felt, lying a little above

and rather in front of the uterus. The uterus itself measured the normal depth; but it appeared to be connected to and moved with this mass, and I believed the case to be one of extra-uterine fibro-cystic tumour, connected to the uterus by a short pedicle. It was evidently not a case for operation. After a time, symptoms of phthisis were developed, and she sank rapidly, having had, in the interval, several sharp attacks of peritonitis. On making a *post-mortem* examination, the whole of the intestines and uterus were turned out of the abdomen in one mass, being glued so closely together by adhesions that they could not be separated. The quantity of lymph effused was enormous; and the peritoneum was at least one-eighth of an inch in thickness. The tumour, which could be so distinctly felt through the abdominal walls, appears to be mainly composed of lymph. It was not directly connected with the ovary, which was sunk very low in the pelvis; and, therefore, although the whole mass appeared to move together when a finger was placed in the vagina and the hand on the abdomen, they were not connected except by adhesions. The ovary, which is the size of a goose-egg, is full of cysts, and is completely disorganised. I am not aware of any case of a similar nature in which menorrhagia was a prominent feature, as it was in this case.—*December 12, 1874.*

Exophthalmos.—DR. WILLIAM MOORE said:—These specimens were taken from the body of a woman, aged forty years. About the month of May last I saw this patient for the first time. She was then complaining of violent palpitation. There was, indeed, nothing remarkable about her, except the constant complaint of palpitation, and also some visible pulsation in the neck. I prescribed for her at the time, and with good results, as I did not see her again till three weeks ago, when she presented herself at Sir P. Dun's Hospital. She now had remarkable exophthalmia, and was admitted. She was a pale woman; still her lips were of a good rosy colour. The chief complaint she made was of the great cardiac distress and the violent pulsation. She also had deficiency of vision, for when she attempted to read, the print coalesced; neither could she sew nor write. Her spirits were extremely low, and she dated all her depression from the month of March last, but she was unwilling to state the nature of a mental shock which she then received. When admitted into hospital, the exophthalmia was most remarkable, and on stripping the patient, a double pulsation was visible—a pulsation of the deep vessels of the neck and also of the veins, the left jugular being larger than the right. We ascertained that this woman was the mother of five children; but latterly the menstrual function had been completely in abeyance. We were struck with a remarkable fremissement over the precordial region, and on percussion there was some dulness. The stethoscopic signs were remarkable in this case. There was tumultuous and irregular

action of the heart, but no murmur could be detected at any time. What we had to deal with principally was this rapid, tumultuous, and irregular action of the heart. Six or eight gentlemen tried ineffectually to count the pulse. As nearly as we could approximate, the beats were about 160 in the minute. She was soon afterwards seized with an uncontrollable diarrhoea, and sank very rapidly. We have here the heart, the kidneys, and a portion of the liver, which were procured with considerable difficulty. On examining the heart, there is no evidence of valvular disease to be found. Nor if you examine its exterior is there any evidence of fatty heart; and the President, having submitted a portion of the left ventricle to microscopic examination, informs me that there is no appreciable fatty degeneration. There is some hypertrophy of the left side, but no evidence either of aortic or mitral valve disease. You can introduce two fingers easily into the left auriculo-ventricular opening, and there is no aortic obstruction or patency, nor fatty degeneration, to explain the palpitation and irregular action of the heart. The kidneys are good specimens of fatty kidney, and the liver is also fatty. Why then, it may be asked, do I bring forward a case which presents no remarkable pathological features? That, in my mind, constitutes the great interest of the case. The visible pulsation in the arteries cannot be explained by a patency of the aortic valve. The visible pulsation in the veins (that in the left being more visible than in the right) cannot be explained by any dilatation, or mitral regurgitation, or varicose aneurism. I believe this to be a case of cardiac pulsation with exophthalmia, but without the pulsating thyroid body, and that it is essentially a neurotic affection, as pointed out years ago by Dr. Stokes. Trousseau, Galezowski, and others, believe it to be due to some perverted sympathetic action; but the recent experiments of Schiff would point more to some affection of the "hastening nerves of the heart," which he considers belong to the system of the vagus.—*December 12, 1874.*

Gangrene of the Lung.—DR. NIXON said:—I propose to lay before the Society two specimens which illustrate the two forms of gangrene occurring in the lung. The first was taken from the body of a man, aged twenty-four, who was admitted into hospital on the 11th of December last. The history of the case was as follows:—The man had been extremely intemperate. For six years prior to his death he had taken six glasses of whiskey and ten pints of porter daily. He had often been exposed to wet and cold, and some two or three days before admission to hospital, he got very drunk, and having fallen in the street, lay out in wet clothes all night. The next day he felt very ill, took a Turkish bath, and went home, but becoming very prostrate, he was sent to hospital. He had complained for some weeks prior to admission of a slight cough, with yellowish expectoration, occasionally tinged with blood. On examining the base of

both lungs behind, I discovered there was a moderate degree of dulness, and that the breathing was slightly roughened, but otherwise normal. I then proceeded to examine the front of the chest, and on the right side, three inches below the clavicle, I discovered a curious clicking sound, getting at the same time a whiff from the breath of extremely well-developed fœtor—sweetish and feculent. The fœtor presented the characteristics described as occurring in cases of gangrene; it was not constant, but it could always be developed by getting the patient to cough. He complained of a severe tearing pain along the right side of the chest in front, and on examining over the site of pain, I heard a well-marked pleuritic friction sound. There was a morbid sound also heard over the heart, which I thought was pericardial, but it was not well-marked. The temperature on the day of admission was 99·8° F., it rose to 103° F. on the following day; the pulse was 132, and weak; respiration 43; the decubitus was dorsal; the man was unable to sit up in bed, or to lie on either side. Examining him as well as his condition permitted the next day, I found that the lower part of the lung towards the back was femorally dull. The pleuritic friction sound had disappeared, and also the abnormal sounds heard over the upper portion of the right lung. It was manifest a large amount of pleural effusion had taken place, and the signs of pericarditis, obscure on the previous day, were now well pronounced. Upon getting the patient to sit up in bed, a splashy sound was heard over the base of the right lung; the right infra-clavicular region was resonant upon percussion; the breathing over the left side of chest was found compensatory both in front and behind. The pulse and respirations increased in rapidity; the man became delirious, and he died upon the third day after his admission to hospital.

Dr. Nixon said the case presented a good example of diffuse gangrene of the lung, the site of the gangrene being the middle lobe of the right lung. There were two perforations of the lung, one in front, and the other upon the pericardial surface of the middle lobe. These perforations explained the occurrence of the pleuritis with effusion and pneumothorax which existed. Throughout the lung there were no evidences of pneumonia; none even surrounding the gangrenous portion. The lower lobe was perfectly airless, and sank in water. It was in a condition of carnification, from the pressure of the pleural effusion. Both surfaces of the pericardium were coated with yellowish lymph.

The case belonged to the class of cases described by Andral, where gangrene arises preceded by the signs of slight irritation. During life there had been an absence of the physical signs of pneumonia, and there was no evidence of its existence found after death. The starting point of the disease would seem to be the prolonged exposure to cold, which, determining from the surface, excited a marked hyperæmia of the lung. Possibly from accidental conditions—such as the blocking up of a

bronchial tube with mucus, or congestion of the mucous membrane, owing to the bronchial catarrh, from which the man suffered for some time—the hyperæmic condition and œdema of the lung were more intense in some parts than in others, and by pressure upon the branches of the bronchial arteries, the nutrient vessels of the lungs, this œdema cut off the supply of blood, thus leading to localised necrosis. It is singular, however, that in those cases of pulmonary infarction or apoplexy, occurring after prolonged exposure to cold, as after immersion, cases constituting the *gangrènes curables du poumon* of Lasègue, where there are no séptic foci, gangrenous action should be lit up, whilst in similar conditions following heart-disease gangrene is so rare. Anstie conjectured that the rapid course of acute phthisis in drunkards was due to a paralytic or semi-paralytic condition of the nutritive fibres of the pneumogastric nerves, resulting from excessive stimulation. I assume that in this case a similar condition existed. The death of the part deprived of blood, under such circumstances, would be rapid, nor would a sufficiently active circulation be maintained in the surrounding tissue to generate the ordinary products of inflammation; hence the absence of any traces of pneumonia.

The second specimen was taken from a man, aged fifty, a wine porter, who was admitted to hospital on Thursday morning, and died on Friday night. His history was, that he had been always a strong and healthy man up to three weeks before admission, and that he had never been intemperate. Three weeks ago he got a severe wetting whilst out with his van, and since then had not been well. He complained of sore throat and a pain at the back of the neck. The sore throat subsided, but the man could not go out to his work; he felt weak and tired, and a week before admission to hospital the sore throat returned, he suffered from urgent vomiting, and he noticed swelling on the back of the wrist, which caused him considerable pain. He became very feverish, and there was a history of his being delirious. When he presented himself at the hospital, it was evident that he was extremely ill. He had an anxious expression of face and a very dry and brown tongue. I examined his lungs very carefully, and detected nothing but bronchitic râles, both in front and behind; the pulse was rapid, and the respirations were 64. On examining the dorsum of the wrist, I discovered a large swelling, which gave me the idea of an anthrax. It produced constant pain, which was increasing in intensity. It struck me as curious that the man should have so much prostration, and so rapidly developed, with only the physical signs of bronchitis; and it occurred to me that the case might be one of pulmonary gangrene, not manifesting itself by physical signs. The man was extremely weak, and he died at night, twelve hours after admission. On examining the swelling on the back of the wrist, I found it contained a gangrenous slough. A quantity of débris of gangrenous matter exuded

through the small wound which I made on the wrist. I examined the part with a probe, but there was no diseased bone in connexion with it. On observing the condition of the lungs, I found the following pathological changes:—The lower extremity of the upper lobe of the right lung was altered in appearance, being yellowish and greenish in colour, and in parts solidified. On making a section into it, a distinct cavity filled with gangrenous detritus was observed, which, however, exhaled no gangrenous odour. Upon dissecting the branch of the pulmonary artery leading to this portion of the lung, I found a second centre of purulent infection, and in the branch of the artery a triangular hard mass of decolorised fibrin, which completely plugged the vessel, and was intimately adherent to its walls. The other portion of the lung seemed to be congested and filled with black fluid blood.

Previous to the man's death, large oblong bullæ had formed on the outer side of each leg, and these presented *post-mortem* the appearance of superficial gangrenous ulcers. In every part of the body examined the blood was found fluid, and of a dark hue. The heart and abdominal viscera were normal. A very rapid decomposition of the body seemed to set in.

As a point, perhaps, worth some notice in connexion with this case, I may mention, that as I took special interest in investigating its result, I spent a considerable time in making the *post-mortem* examination. For some three or four days afterwards I suffered from malaise and occasional attacks of vomiting, and I remarked to the resident who had charge of the patient that I did not feel well since he came under my notice.

It would seem evident that in this case there was a primary blood lesion, which generated the local and constitutional symptoms noted. The rapid prostration, the vomiting, the delirium, and the characters of the local lesion, indicated the development in the system of some poison, or its introduction from without. This view would appear to be borne out by the pathological conditions found, especially the state of the blood, the gangrenous eschars upon the extremities, and the advent of rapid decomposition. In many respects the case resembled the disease particularly described by Thomassin and Fournier under the name of charbon.

There was no history in my case to connect the disease with any specific or virulent poison transmitted from an animal; but both Fournier and Voyssier point out that charbon may be spontaneously generated in man under the influence of general or miasmatic causes. The condition of the lung is readily explained upon the theory of embolism from the gangrenous cellular tissue on the back of the wrist, whilst the nature of the embolism accounts for the rapid supervention of gangrene and purulent infection.—*December 19, 1874.*

Psammoma of the Dura Mater.—DR. E. W. COLLINS said:—The tumour which I lay before the Society derives its interest solely from its histological features and pathological connexions. It was taken from an elderly subject in the anatomical school of the University during the removal of the brain. It grew from the inner endothelial surface of the left side of the falx cerebri, where it was attached to the crista galli. It projected freely into the subdural space, and had hollowed out a slight depression upon the overlying convolutions of the left frontal lobe of the cerebrum. It was soft in consistence, so as readily to separate from its attachment, light, about the size of a walnut, rather more oval than round, and of a greyish white colour. When hardened in spirit, it exhibited microscopically the appearances characteristic of the tumour to which the names psammoma and angiolithic sarcoma have been given.

A fibrous investment and fibrous stroma constituted the chief bulk of the tumour. Embedded in it were very minute isolated calcareous particles of brain-sand, reflecting light and presenting their peculiar concentric lamellar arrangement when examined under a high microscopic power. They varied somewhat in size and number in different places, but were chiefly remarkable for their very small size and scanty distribution throughout the fibrous elements of the tumour. The tumour was also remarkable for its vascularity, even the ordinary coarse injection freely permeating its structure. Some of the said particles bore a suspicious proximity to the walls of the neighbouring blood-vessels, though no such definite connexion with the vascular wall could be clearly ascertained as led Ranvier to the conclusion that they were primarily deposited in ampullary dilatations of the walls of the vessels, from which they subsequently became detached. No cells were found differing from those proper to sarcoma, so as to favour the epithelial mode of development suggested by Robin and Meyer; but in some instances the concentric arrangement of the spindle-shaped cells, described by Stendener, was observed. The view of Virchow, that such tumours are hyperplastic formations, owing their origin to increased development of the sand particles, which physiologically are found so frequently on the inner surface of the dura mater and in connexion with the choroid plexuses, seems to me the most correct as regards the specimen I have exhibited. Apart from its special pathological characters, the tumour is interesting, as only one other specimen of this form of tumour has been laid before the Society, two years since, by Dr. Yeo, which will be found to differ in not a few respects from that I have described.—*December 19, 1874.*

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*Cases in Surgery.* By JOHN HAMILTON, Surgeon-in-Ordinary to the Queen in Ireland; Surgeon to the Richmond Hospital.

I.—FEMORAL ANEURISM, LIGATURE OF THE EXTERNAL ILIAC ARTERY.

II.—SURGICAL TREATMENT OF ENLARGED BURSA.

III.—REMOVAL OF SCIERRHOUS TESTICLE.

I.—*Femoral Aneurism, Ligature of the External Iliac Artery.*

Michael Ruddock, a policeman, aged twenty-eight, sandy hair, who looks much older than he is, rather bald, of a pale flabby habit of body, inclined to be too fat, but tall and muscular; accustomed to drink from one to two pints of porter daily, was admitted into the Richmond Hospital, October 5th, 1874, with femoral aneurism.

The aneurism was high up, just below Poupart's ligament, which it touched; the pulsation was strong and diastolic, but without soufflet; about the size of an orange, but flat and irregular, terminating in a cone at the lower end, where there was some induration. The whole limb much swollen, cedematous, and powerless. A good deal of tenderness and some flagging along the course of the femoral vein, down to the knee, and upwards in the pelvis, pressure in this

situation giving such pain that digital compression could not be thought of. There was also a large tender gland over the lower end of the external iliac artery, a little above Poupart's ligament. He complained of pain in the inside of the thigh to the knee; his nights sleepless; pulse 96; little appetite and thirst. Heart's action and sounds normal, and no indication of disease of the arch of the aorta. The obstruction to the venous return circulation, by the pressure of the aneurism on the femoral vein, might cause the œdematous swelling of the limb, but I believe it was also partly due to the adhesive phlebitis of the femoral vein, marked by the pain, tenderness, and flagging in the situation of the vein. He was an unfit subject for any form of compression, from the position of the aneurism, and the local complications, nor did he appear a good subject for the ligature of the external iliac artery. Before anything was done it was considered best, in consultation, that there should be a few days' rest, with the application of leeches over the vein, fomentations, gentle purgatives, &c.

Besides the circumstances already mentioned, that might be adduced as unfavourable for operation, were the fatness, the general habit, and mode of living of the man, the œdematous condition of the limb, and the state of the femoral vein; also the rapid progress of the aneurism, which he had only perceived a fortnight before, his attention having been called to it by a sense of throbbing.

He was so much improved at the end of ten days' treatment and rest, that I determined to operate, though there were still some unfavourable indications; the leech-bites had become irritable and suppurated, with a patch of erythema across the thigh in mottled patches up the outer and higher part. On the other hand, there was no time to lose, if the operation was not now performed, for the aneurism had increased fully one third upwards, under Poupart's ligament, into the pelvis.

October 17th, 1874, with the full consent of my colleagues, Dr. Tufnell and Dr. Benjamin M'Dowel being also present, I performed the operation.

Tying the external iliac artery in the dead subject is comparatively easy, nor is it very hard in the living body when the patient is thin, but when, as in this case, the man was tall, over six feet, large, muscular, and fat, with the aneurism so high up, and an enlarged gland over the lower part of the iliac artery, it was very difficult indeed. This may be understood from the fact of the depth being so great to reach the upper part of the vessel, where,

from the facts mentioned, it could only be tied, that it could not be seen, and to feel it I had to bury my finger, beyond the knuckle, near five inches. All the arrangements of tying the artery were, therefore, accomplished by touch alone.

The operation I performed was that of Sir Astley Cooper, and, calculating on the depth of the artery, I gave myself, by the freedom of my incisions, plenty of room.

The ligature was a hard round silk cord, and I tied it very tight. The great difficulty where the vessels are so deeply situated, and the tying the artery is accomplished by feeling and not sight, is to get the aneurism needle round the artery without wounding the iliac vein. This I accomplished by scratching with the end of a steel director (directed by the finger) over the centre of the artery through the thin cellular sheath which surrounds it, and through the opening thus made passing the end of the aneurism needle from within outwards, keeping the end of the aneurism needle closed round the artery and within the sheath.

Directly the ligature was tied all pulsation stopped in the artery. There was a tendency for the peritoneum and the bowels within it to bulge through the wound; so I put a large compress over it, secured by a tolerably tight bandage. This I had to cut through a few hours after, as the pressure caused him uneasiness. It had, however, answered its purpose, as there was no longer any tendency for the peritoneal tumour to bulge forward through the wound.

Fever ran high for the first few days, and there was a great disposition to sweat. After suppuration was fully formed at the deeper parts of the wound, and the matter got free vent, the intensity of the febrile symptoms subsided. Temperature kept up well in the limb. On the third day he required a catheter to be passed, as he had retention, but never subsequently. About a fortnight after the operation (Nov. 30) I found an increase of fever, and the discharge more profuse. The wound appeared stopped by some substance of a yellow colour. On removing this with a forceps, it proved to be the enlarged lymphatic gland that had been felt over the iliac artery and vein, and which had been converted into a yellow mass of rather a firm consistence, the size of a walnut, which had separated and was making its way out. It had obstructed the free flow of pus. After its removal, and the matter had unobstructed exit, everything went on well. Two days after (the fifteenth day) the ligature came away; this was earlier than I had expected, considering the size of the artery.

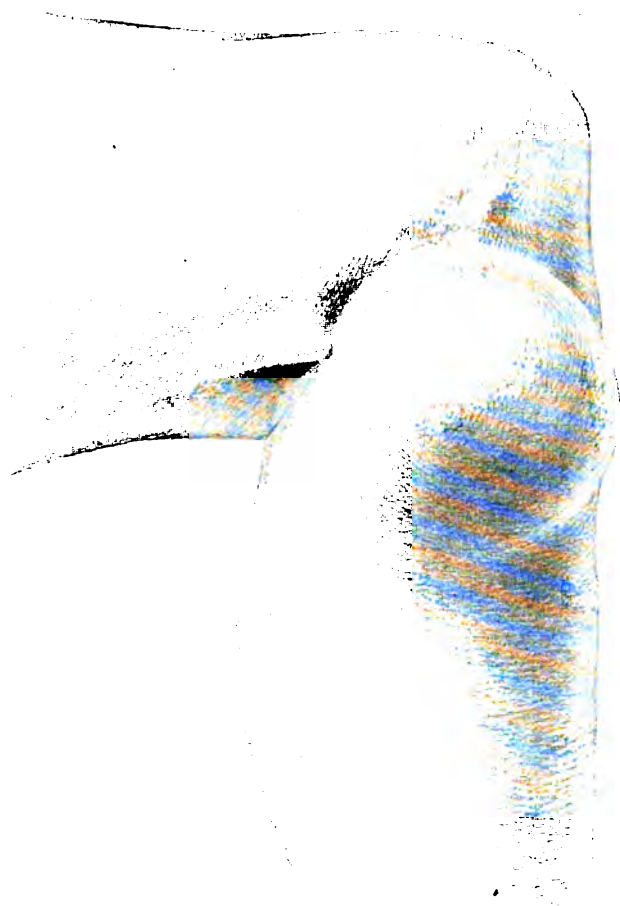
Jan. 7th.—He was dismissed quite well, a little numbness on the inside of the knee being his only complaint.

March 9th.—He has been in the country since with great advantage to his general health, and expects in a week or so to return to his duties.

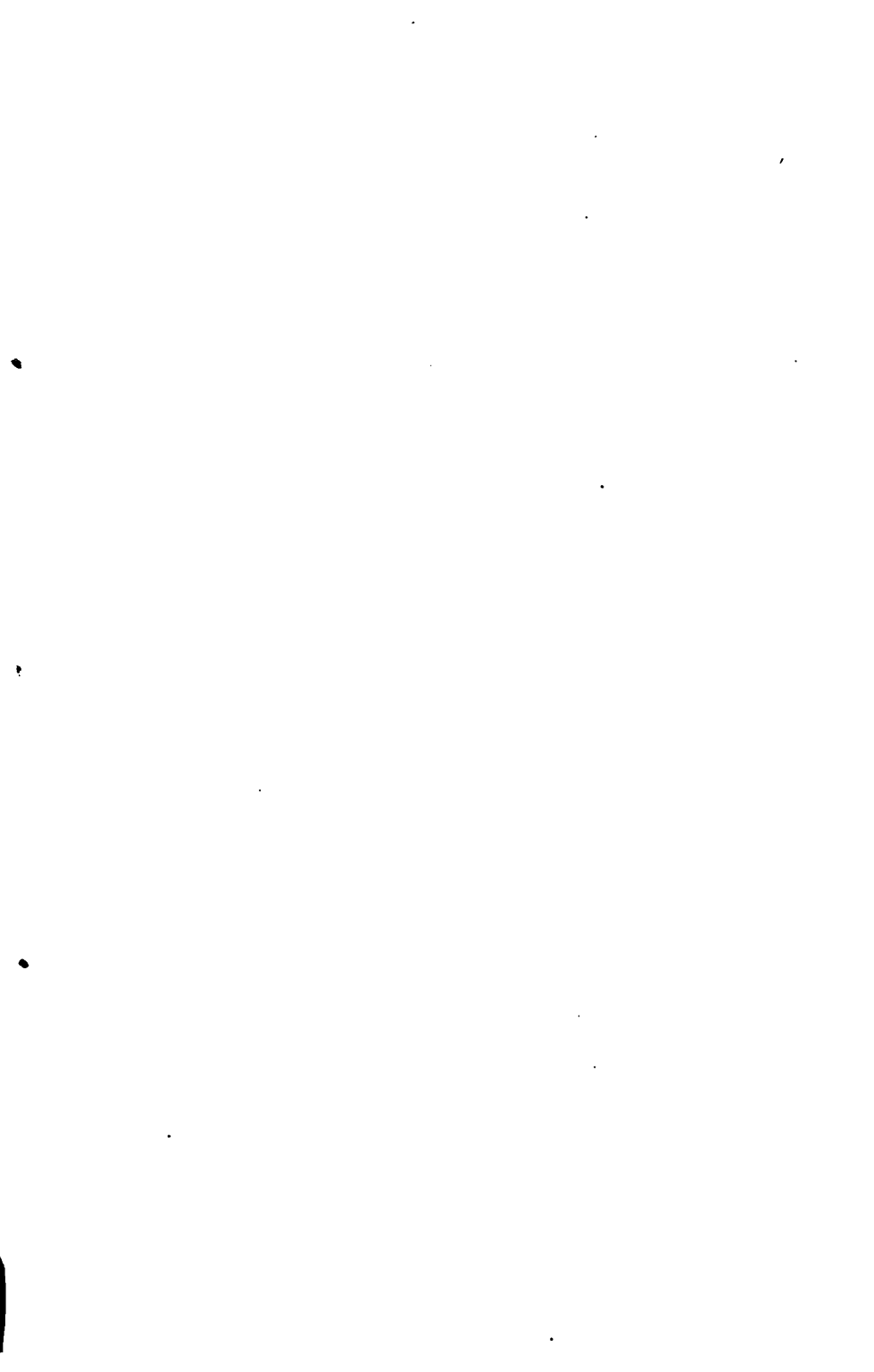
II.—*Surgical Treatment of Enlarged Bursa.*

When a bursa over the knee forms a large tumour with thick cyst, it is only waste time to try blistering, tincture of iodine, and other irritating applications to the surface, with the idea of causing its absorption. Nor have I seen a better result from drawing off the fluid with trocar and canula; the thickened cyst which remains soon fills up again, and the tumour becomes as before. When these old cases of enlarged bursa are of moderate size—that of a small apple, for instance—I lay them freely open by passing a straight bistoury through the base, and cutting upwards. The contents (whether simple fluid varying in consistence from bloody serum to that of honey, or gelatinous, or mixed with shreds, or containing foreign bodies) is at once entirely let out; the inside of the cyst, sometimes smooth, sometimes rough, or traversed by bands, is then filled with small pieces of lint, and covered with water-dressing. A certain amount of inflammation follows, with suppuration, granulation, contraction, and cicatrisation of the large wound. I have operated in this way on a considerable number of enlarged bursæ over the knee with complete success. There has been some fever on the second or third day, and in two of the cases an abscess formed at the outside of the knee, as if in consequence of continuous inflammation, but the symptoms following the operation are rarely such as to cause anxiety. The following case exemplifies the treatment. The enlarged bursa is in an unusual situation (see Plate I.).

David Condon, aged thirty, a baker, was admitted on the 20th January, 1873. He complained of a tumour, of the size of a large orange, on the outside of the right leg, corresponding to the head of the fibula. The surface was not discoloured; there was no pain, except after walking or standing for a considerable time. On examination it was found to be soft and freely fluctuating. It was first noticed four years before, and since then it has grown slowly. It remained about the size of the top of his finger for a long time. Since it first appeared it has burst subcutaneously four times. On some of these occasions it was as large as it is now when going to



Nº 1





№ 2

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bed, but on awakening he found that the contents were diffused beneath the integuments of the leg. Three and a half years ago he went to the dispensary at Mercer's Hospital, where the tumour was tapped. He does not recollect having hurt the part at any time, but, when at work, it sometimes comes into contact with the bench.

As the patient had been drinking, he was prepared for operation by suitable diet, and was ordered to take half an ounce of the following mixture three time a day:—

R.—Inf. Gentian,	.	.	℥ii.
Liq. Alkal. (Brandish)	.	.	℥i.
Aquæ	.	.	ad. ℥viij.
Fiat. Mist.			

On the 1st February, I opened the tumour by a free transverse incision. Some ounces of beautifully clear amber-coloured fluid escaped. It was of a somewhat thicker consistence than the albumen of an egg. The wound was plugged with lint, and water-dressing applied.

There was nothing particular to note after the operation. Not a single bad symptom occurred, and he was finally discharged; cured, on the 22nd February, the inside of the cyst having granulated and cicatrised.

The next case appeared to me one for the complete removal of the bursa; it was of such great size that simple division, as in the previous instances, would have left an immense surface for suppuration; and its duration, till it got well, would have been tedious and difficult in the extreme.

A healthy woman, a widow, thirty-four years of age, was sent from the Whitworth Hospital, by Dr. Gordon, on account of a very large bursa over the front of the knee. It was the largest I ever saw, the size of a small melon, and situated over the patella and the ligament of the patella, and laterally over the sides of the knee-joint (see Plate II.). It was movable from side to side, to a certain extent, but fixed at the base to the patella and subjacent parts; fluctuating freely; the cyst thin in some, thick in other parts. It was obviously useless to try anything but removal.

November 25th, 1875.—She was put under a mixture of chloroform and ether (about a fourth of the latter) to insensibility. I made a perpendicular incision from the top to the bottom of the tumour, and through the integuments down to the cyst. I dissected up freely the integument from the cyst, to about an inch

from its base, turning down the skin on either side so as to expose about the upper three-fourths of the cyst; this I removed with a horizontal stroke of the knife. In opening the bursa a quantity of thin, clear, bloody fluid escaped; but the cavity was found full of a soft, shreddy, solid material, of a pale red colour; most probably, the remains of what had been a clot of blood, the red particles having been absorbed and the fibrin left. This, no doubt, had occurred from the rupture of some vessel on the lining membrane of the bursa. I next removed, in portions, the entire of the rest of the sac. It required careful dissection, as it lay so closely connected to the capsule of the knee-joint. The large cavity left by the removal of the cyst of the bursa, was lightly filled with pieces of lint, and water-dressing over it. A fortnight after she was doing very well, without a single troublesome symptom since the operation. The cavity had suppurated kindly and was filling with granulations and the wound contracting. She left hospital quite well, February 1, 1875, between eight and nine weeks from the operation.

III.—*Removal of Scirrhus Testicle.*

It is very seldom, indeed, that we have to remove the testicle for scirrhus disease. In the two following cases, the morbid action in the testicle arose from chimney-sweepers' cancer.

Edward Morgan, a chimney-sweeper, was admitted on the 9th November, 1874, with cancer of the left side and front of the scrotum. There was a large circular ulcer, with raised edge, and the surface hard, granular, and warty, with much foetid discharge, which had reddened and irritated the surrounding scrotum. It was movable, on its base, from side to side. When I had dissected out the cancer, I found, at the centre, that it was adherent to the tunica vaginalis scroti beneath it. I, therefore, removed all the affected part of the tunica vaginalis—opening, of course, into the cavity, and exposing the testicle. The wound was dressed with water-dressing, and subsequently bread and water poultice, granulation soon covered the exposed testicle, and the wound had cicatrised nearly altogether when he left the hospital, on the 20th December, and returned at once to his work.

After an absence of over two months he returned to the hospital, March 1st, 1875, with the disease worse than ever—a large, irregular, prominent, warty ulcer extending to the root of the penis, and evidently implicating the testicle, which was amalgamated with the mass. It was clear that the testicle must be

removed with the whole of the disease. The cord was cut down upon, isolated and tied, and the cancerous mass, including the testicle, was entirely removed, a few arteries were tied, and wet lint applied over the surface of the large wound.

On making a section of the diseased mass and the testicle, it was seen that the base of the cancer rested on, and was amalgamated with, the body of the testicle, the hard white substance of the cancer having converted the tunica albuginea into a similar substance, which encroached by a thin irregular line into the substance of the testicle, the rest of the testicle being sound. Since the operation he has gone on very well.

The second case bears considerable resemblance to that related.

A sweep of the name of Murray, twenty-nine years of age, was admitted into the Richmond Hospital, with a large soot wart on the front of the scrotum, a little to the left side. He was a man of very intemperate habits, and his general health and nervous system were completely shattered. The cancerous ulcer presented the usual characters, and was about the size of half-a-crown; it went deep, and was evidently attached to the testicle; the testicle moving with it when it was stirred from side to side.

When the cancerous ulcer was removed, along with the testicle, and a section made of these parts, it was seen that here also the base of the ulcer was amalgamated with the tunica albuginea, which was converted into a similar structure, and encroached on the tubular substance of the testicle. The affected portion was carefully examined in the microscope, by Drs. Harvey and Stack, and presented the true characters of epithelial cancer. I saw this man, March 9th, for a cut head by a run-away horse. He was well otherwise, the cicatrix of the wound being healthy.

In both these cases the cancer in the testicle was secondary, and the gland only contaminated by contiguity.

ART. XII.—*The Treatment of Scarlatina.** By JAMES LITTLE, M.D.; Fellow of the College of Physicians; Professor of Practice of Medicine, Royal College of Surgeons; Physician to the Adelaide Hospital.

At the last meeting of the Council of the Medical Society there was an expression of regret that the subject of scarlatina had not

* Read before the Medical Society of the College of Physicians, March 10, 1875.

been brought before the Society during the present session, when it has prevailed so extensively in the city, and has engaged so much of the attention of many of the members. As I knew that the circumstances connected with its spread will be made the subject of a communication at a future time, it occurred to me that we might, at this meeting, profitably discuss the treatment of the disease, and I therefore propose to state the conclusions at which I have myself arrived on that subject. Though there may be but little of importance in my own observations, I hope they will elicit some valuable information from other members, several of whom have had extensive opportunities of watching the epidemic.

Of all diseases scarlatina is the one in which it seems to me it is most necessary to abstain from the administration of medicine, unless there is a very distinct indication to be fulfilled, and reasonable grounds for believing that we have a drug which will fulfil this indication.

During the winter of 1868, and the following spring, I had a considerable number of cases of scarlatina under my care; and following a very general practice, I prescribed chlorate of potash and tincture of perchloride of iron in most cases, and I believe at the present time these are the remedies in which most confidence is reposed, as capable of exercising a certain favourable influence on the course of the disease, and especially as contributing to ward off those complications which seem to depend on a septic state of the blood. In the present epidemic I have seldom used either chlorate of potash or tincture of iron; I gave them up, because whilst they did not appear to me to produce any distinct effect on the symptoms, the mere swallowing of any drug, and especially of these drugs, is painful in scarlatina, and both the chlorate of potash and the tincture of iron appeared to me to increase sickness of the stomach and looseness of the bowels if already present, and sometimes to bring on these undesirable complications when they had not previously existed; and I am certain that I have not seen extensive swelling of the neck or the pyæmic inflammations of joints more frequently among cases in which these remedies were not used, than amongst cases in which they were assiduously administered.

As I have most frequently seen the so-called brawny neck in cases in which, during the earlier days of the disease, there was severe inflammation of the tonsils, and much offensive secretion in the throat, I think it is important to lessen the local mischief there

as much as possible, and I have been best satisfied with the results obtained by simply clearing the throat twice a day, or in severe cases more frequently, with a large soft camel-hair brush, which had been previously dipped in a mixture composed of one part of the glycerine of carbolic acid and two parts of water; when the patient is not too restless to allow a poultice to be kept firmly applied below and behind the jaws, is also advantageous; the sucking of ice does not appear to me to be useful, as the water which results from its melting entails frequent and painful acts of deglutition.

Whilst the dangerous pyæmic affection of the joints has not, I think, been frequent during the present epidemic, the slighter affection, known as scarlatinous rheumatism, has been very common, and in five cases which I saw seemed to be the cause of a rather severe pain in the back of the neck; for this scarlatinous rheumatism an anodyne liniment and cotton wadding are, I believe, the best applications.

The management of the disturbances in the functions of the nervous system in scarlatina is one of the most difficult duties of the physician; in one case, that of a girl six years of age, three epileptiform seizures occurred when the eruption was beginning to appear; I saw her soon after the third fit, and found her in a drowsy, half-comatose condition. She was placed in a warm bath, a leech was applied to each temple, and three grains of calomel given, and the child recovered without any further peculiarity in the course of the disease; the intense headache, urgent vomiting, restlessness, and feeling of oppression, which are sometimes present just when the eruption is appearing, are most quickly relieved by swathing the limbs and trunk in blankets wrung out of hot mustard and water. The restlessness, sleeplessness, and delirium, which accompany some cases during the early days of the disease, constitute, in my opinion, sufficient grounds for cutting the hair closely—a proceeding which there is little cause to regret, even in young women, as, in any case, the hair is commonly lost after the fever has passed; when these nervous symptoms are associated with a high temperature, they may often be relieved by tepid sponging, or by the anointing of the body with fresh lard or the benzoated lard of the Pharmacopœia; if the bowels are confined it is desirable to open them by a dose of castor-oil or an enema. In addition, I have found the application to the legs of flannels wrung out of mustard and water, and the administration of bromide of potassium useful, but in cases in which the nervous disturbance is marked, and the heat of head higher than

that of the body, I think it is generally desirable to apply two or three leeches to the temples, and an ice-cap to the scalp.

When there is sleeplessness and screaming without marked heat or irritation of the surface, and without the head being specially hot, I believe it is desirable to give some preparation of opium either by the mouth or by the rectum; if the urine is fair in quantity, and there is no impediment to respiration from swelling of the throat and accumulation of tenacious secretions in it, I do not believe there is any risk in the administration of a moderate dose of solution of morphia; in my opinion it is much safer than chloral, which I have known, even in a moderate dose, produce embarrassment of respiration, coldness of the extremities, and lividity of the face. I must acknowledge, however, that my dread of this drug in fevers has prevented me using it often, and I may, perhaps, overestimate the hazard attending its employment.

When instead of wakefulness there is screaming, grinding the teeth, injection of the eye, and a condition approaching that of coma, I think we usually find the secretion of urine is scanty or absent, and under such circumstances I have found tea and coffee the best remedies. As most of the members are probably aware, Dr. Parkes, many years ago, made a series of observations which went to show the power possessed by tea and coffee of increasing the elimination of urea in fevers, and undoubtedly I have seen the kidneys act more freely after a cup of rather strong freshly-made tea, than after medicinal diuretics. But if the water continues scanty I am in the habit, in addition, of dry-cupping the loins, and applying a digitalis poultice, and prescribing the diuretic mixture commonly in use, and which contains nitre, nitric acid, and sweet spirits of nitre.

Unfortunately it sometimes happens that although the urine is abundant, the head symptoms I have described persist; the patient lies in a semi-comatose condition; though he may be aroused for a minute or two, and may be sufficiently conscious to take a drink, he rapidly closes his eyes and sinks again into a state of stupor; with this there is hurried breathing, an extremely weak and frequent pulse, and generally a deeply-injected conjunctiva; these symptoms are, I think, usually met with in cases in which, during the earlier days of the disease, there was sleeplessness and marked heat of head, and though I had seen them come on in cases in which these symptoms had been treated, I believe they are more common when, in spite of early indications of cerebral disturbance, the hair has been

allowed to remain on the head. The application of a blister to the nape of the neck or to the occiput, will sometimes rouse a patient from this condition, but when the symptoms I have enumerated are pronounced, I think death usually occurs, and it has been with such symptoms that I have seen most fatal cases of scarlatina terminate.

I am particularly anxious to hear the opinions which those who have seen much of scarlatina have formed as to the proper management of the condition known as the brawny neck; when it has been highly marked I have never seen recovery take place; where, however, there is merely considerable tumefaction below and behind the jaw, the swelling usually subsides, and I think is best treated by fomentation, gentle rubbing with warm oil, and poultices firmly applied.

Vomiting and purging are not only ominous symptoms in scarlatina, but have a directly injurious effect upon the patient; I am, therefore, extremely careful to avoid any food or medicine which may provoke them. When the eruption is tardy in appearing, I believe they may be lessened by the warm bath, or by the application of flannels wrung out of mustard and water, but I do not think that medicines can be relied on to stop them.

With my dread of irritating the gastro-intestinal tract, I have endeavoured as far as possible to feed my patients on milk, given either alone or made into junket, or with tea, coffee, or soda-water; beef-tea I have avoided, and even chicken-broth I have used sparingly; acidulated barley-water is a pleasant drink. I have found a very valuable addition to the dietary in the nourishing lemonade described in the Appendix to "Ringer's Therapeutics." The effect of wine and brandy in supporting the patient, is, in my opinion, less marked, and their effect in injuriously exciting him more marked than in most fevers, and I do not, therefore, look upon alcoholic stimulants as very valuable agents in the treatment.

For the tormenting itching which attends desquamation, inunction with lard is *the* remedy.

I do not think that treatment has any power over the pyæmic affection of the joints.

* The juice of four lemons, the rinds of two, half a pint of sherry, four eggs, six ounces of loaf sugar, one pint and a half of boiling water. Pare the lemon-rind thinly, put it into a jug with the sugar, and pour the boiling water on it. Let it cool and then strain it, and add the wine, lemon juice, and eggs previously well beaten and strained. Mix all well together, and it is ready for use. See also Mrs. Beeton's Book of Household Management. For most patients it is better to use only half the quantity of sherry and rather less than six ounces of sugar.

ART. XIII.—*Notes on Scarlatina.** By ARTHUR WYNNE FOOT, M.D.; Junior Physician to the Meath Hospital.

It appeared to me that it might be of interest, at the present time, to offer a few brief remarks on some points connected with scarlatina. The epidemic which has just begun to abate has furnished numerous cases for observation, and has enlarged the experience of many, while it has almost originated that of some. Among the latter class I place myself, and, therefore, I noted, with care, as many cases as I had time to observe accurately, and added them to my small stock. The object in view was not statistical in any way, but the acquisition and preservation of a personal experience of the disease. I find in my note-books 73 cases detailed in full, and of 17 others the clinical charts of temperature, &c.; these data furnish the basis of my comments on the subject. These 90 cases, the greater number of which have reference to the present epidemic, do not, of course, include all the cases which have come under my observation, but are merely those to which I can refer with certainty as accurately noted at the time. The number may appear very small to some, but as my experience has been principally derived from the wards of the Meath Hospital, it is proper to observe that the accommodation there, in the isolated building for infectious diseases, is scanty; that many of the cases, owing to tedious sequelæ, occupied beds for a long time—50, 60, and 70 days, or more—and that many were kept in hospital after apparent convalescence, as a prophylactic measure against ulterior complications.

My impression of the late epidemic is, that although the mortality in the city, in general, was large, this was rather owing to its prolongation and general diffusion than to the severity of type it exhibited; and that fatal results occurred rather from the state of health of those attacked than from malignancy in the virus. This impression is founded on three classes of observations—first, the number of deaths was relatively, for scarlatina, small in the number of cases which came under my observation; in the hospital it was 9 in 73, or 12·3 per cent.; secondly, the throat affections, and their consequences, did not seem as severe or as numerous as usual; and, thirdly, the elevation of temperature was not excessive. In reference to the first point, it is to be borne in mind that the rate of hospital mortality of scarlatina is relatively raised by the advanced

* Read before the Medical Society of the College of Physicians, March 10th, 1875.

stage in which, from reluctance to part with them, parents bring their children for admission, often carrying them there only when dying, and when treatment is useless and hopeless; and, again, the very mild cases are usually not brought to hospital at all. Then as to the throat affections, there seemed to be a marked absence of the formidable consequences described in previous epidemics—for instance, in Dr. H. Kennedy's^a account of the epidemic of scarlatina which prevailed in Dublin from 1834 to 1842 inclusive, such as hæmorrhage from the carotid artery or jugular vein, and diffuse cellulitis of the neck. The elevation of temperature was not excessive; 1,857 observations on the temperature in scarlatina have been made by the clinical clerks, the practising pupils, and myself. Seven cases on one or more occasions exhibited a temperature of 105° F., or upwards; four of these seven died. The highest temperature I have observed in scarlatina was 106·8° F. It occurred on the evening of the third day, in a boy aged sixteen, from Rehoboth Reformatory, with the pulse 160, respiration 34. Although quite conscious and intelligent, his lips, hands, and nails were dark blue, his feet and legs of a greyish-lead colour, the chest and back exhibited the eruption of a very dark colour; the throat affection was of the catarrhal variety. Although there appeared to be ample room to swallow, he had spasmodic dysphagia. He died the following morning. From the earliness of the rise of temperature in scarlatina, the thermometer becomes of the greatest use in prognosis; Wunderlich^b observes that in all cases of scarlatina which are tolerably severe, the *first* symptom which shows itself, or, at all events, one of the first, is a rapid and continuous elevation of temperature, by which, in the course of a few hours, this reaches a considerable height, 103·1° to 104° F. The height finally reached by the temperature is almost always above 104° F., very commonly over 104·9°, but seldom in cases which terminate favourably exceeds 105·8° F. Cases of scarlatina also occur in which, very suddenly, and without obvious motive, the temperature rises to enormous heights before death; in one of Wunderlich's cases it rose to 110·3° F. Currie^c found a temperature of 112° F. in a case of scarlatina; and Dr. Bathurst Woodman^d has put on record some fatal cases of scarlatina, in which the temperature amounted to 115° F. In these latter cases the observations were

^a Dublin Med. Jour. Vol. XXIV., p. 264.

^b Medical Thermometry. New Syd. Soc. P. 347.

^c Wunderlich, op. cit., p. 204.

^d Medical Mirror. February, 1865.

made with one of Negretti and Zambra's thermometers, divided into fifths, which had been recently compared with a standard. By sponging with vinegar and tepid water, and then changing to a fresh bed with cool sheets, I have, in a few minutes, reduced a morning temperature of 105° F. to 102·4°. Though Wunderlich remarks that the temperature seldom exceeds 105·8° F. in cases that terminate favourably, I have had a case in which the temperature on the third night was 106°, and which made a good recovery, although the boy, eighteen years of age, was not quite convalescent from typhus when he got the scarlatina. In contrast with this case of recovery from scarlatina after typhus, is one of typhus after scarlatina, which proved rapidly fatal, probably on account of renal disturbance bequeathed by the scarlatinal attack. A fair-haired fresh complexioned lad of sixteen was discharged from an hospital after a five weeks' illness from scarlatina; five days afterwards he got ill, and on the sixth day of this illness he was brought to the Meath Hospital, covered with a close, minute, dirty-pink eruption; sheets of skin were coming off his feet; he bled from the nose, kidneys, and bowels; an icteroid hue came over the skin of the face and the conjunctivæ, accompanied with hiccup, green vomiting, and coma; and he died, in convulsions, on the 11th day of this illness. The kidneys were in a state of parenchymatous nephritis, enlarged—the left to 10, the right to 8½ ozs.—softened, of a brownish-purple colour, and greatly congested; the gorged, pultaceous spleen, weighing 21½ ozs., flattened itself out on the table like a flabby fish. There seems every reason to believe that in this case the fatal issue of the typhus was determined by the recent attack of scarlatina, and it makes a striking contrast with the case of the other lad who got the typhus before the scarlatina.

When the case just mentioned presented itself, and before he was put to bed and examined, as he was stated to have just left an hospital after having had scarlatina, the idea of its being a case of relapse occurred to me, but I have not yet met with a case of genuine relapse in scarlatina. Such, however, occur, and it does not appear to be a very unfavourable event. 'Trajanowski' records eight cases in which relapse took place, and none of them proved fatal. In one, selected as an example, on the twenty-fourth day, seventeen days after the cessation of fever, the scarlatina eruption again covered the whole body, sore throat returned and hæmaturia (desquamation and albumen had been disappearing); on the eleventh

day of the second attack febrile symptoms disappeared, and a second desquamation followed in the usual way. I have met with two cases only of second attacks of scarlatina. One was a young gentleman, aged fourteen, who, I was told, had had scarlatina four years previously, and had been attended for it by a surgeon of eminence, since dead. He was exposed to infection at school, and took it a second time, and had the disease in a very fully developed form. On the sixth day the whole body, with the exception of the face and neck, became covered with a miliary eruption, which was opalescent and whey-coloured in the morning, and by evening was bright yellow. This eruption, which retreated in little more than twenty-four hours, was succeeded by great hyperæsthesia, especially of the upper extremities; he cried out when his hands were touched, or the bedclothes gently tucked in over his arms to keep them from exposure. The pustular eruption seemed to dry up rapidly under the use of 20 gr. doses of sulphocarbolate of sodium every eighth hour. On the twenty-fifth day he got cold from going to a water-closet contrary to orders, and pericarditis set in, with a well-marked metallic friction, which lasted for four days; when this disappeared green vomiting and bleeding from the nose and gums came on; nothing but soda-water would stay on his stomach. On the thirty-eighth day the pulse was 150, and temperature exceedingly high, and he was ordered 5 gr. doses of quinine every third hour. After 10 grs. of quinine he was quite deaf, the pulse was 129, and the temperature reduced; after he had taken 25 grains of quinine he was much better, took some food, and asked to be allowed to sit up; and, although remaining quite deaf for a week, convalesced from this time steadily. The other case of a second attack was in a medical student, twenty years of age, who had charge of scarlatina cases in hospital. He died on the fourth day with suppression of urine, coma, and convulsions. His mother told me that, when a child, he had had scarlatina so badly that the medical man who attended him had despaired of his recovery. A significant point about this case was that he had recently had syphilis; he had taken mercury in abundance, and had had severe attacks of erethismus mercurialis. This latter case bears upon the subject of the relation, hinted at by Dr. Woakes,* between syphilis and malignant scarlatina. Dr. Woakes has advanced the suggestion that cases of malignant scarlet fever, occurring when the type of the prevailing epidemic is mild in

* Brit. Med. Jour. 5th October, 1872. P. 380.

character, may be accounted for by the existence of inherited syphilis. In support of this view he adduces five instances, the only fatal ones occurring to him during an epidemic of scarlatina of nine months' duration, in each of which the hereditary taint was distinctly traced; he also hints that this circumstance, inherited syphilis, may explain the well-recognised fact that, in certain families, scarlatina is almost invariably a fatal disease. In reference to this point, of a relation between syphilis and malignant scarlatina, I think that, if, as Dr. Woakes' cases seem to show, inherited syphilis, by deteriorating the constitution, enhances the severity of scarlatina, primary and recent syphilis would be still more likely to do so; but there are certainly families specially obnoxious to scarlatina, in whom the fatal peculiarity cannot be ascribed to a syphilitic taint.

Cases of Rötheln have not come numerously under my notice, probably because being, as Trousseau observes, the most benign of all the eruptive fevers, and terminating spontaneously without requiring medical interference, such cases were not brought to hospital. However, two well-marked cases were admitted, one of which, a young woman, aged twenty-four, exhibited the compound eruption in a marked degree; the eruption on the trunk, back and front, resembled that of measles, that on the arms resembled that of scarlatina, while there was none upon the legs. The subfebrile temperature, especially in their early stages, accorded remarkably with those of the cases published by Dr. J. W. Moore,* in whose communication on the subject will be found a very complete *resumé* of what is known about this affection.

Many cases of scarlatina, and principally the worst, were thickly covered on all parts but the face with what might be called puriform sudamina, but which Hebra^b refers to the opaque form of miliaria crystallina constituting the *scarlatina miliaris*. This eruption was usually accompanied with very troublesome itching, which was relieved by sponging with vinegar and water, and in males its existence on the scrotum—about which part and in the cleft of the nates it was abundantly developed—gave rise to much annoyance from friction against the thighs; this was alleviated by enveloping the scrotum in wadding. In two fatal cases with lurid purpuric eruption—one of which a boy, aged fourteen, died on the sixth day, the other a young man, aged

* Irish Hosp. Gazette. 15th June, 1874. P. 186.

^b Diseases of the Skin. Syd. Soc. Vol. I., p. 389.

twenty-two, on the fifth day—the contrast on the indigo-coloured corpses of the bright-yellow or milk-white eruption was very striking, and verified Hebra's observation—that if there is any one eruption which remains visible and unchanged after death it is this, the miliaria. This eruption appeared of an unusually large size in a girl of sixteen, who recovered; on the twelfth day large, white, raised vesicles, the colour of grease, uncommonly like the milky, flattened eruption of variola, which goes by the name of the "white pock," appeared in numbers on the front and sides of the chest and abdomen; there were many the size of a fourpenny-piece; they appeared to be the form of eruption which has given rise to the term *scarlatina pemphigoides*.^a Besides the ordinary scarlatina eruption and the miliary and pemphigoid eruption, urticaria was noticed, and in one case a rose-coloured papular eruption appeared subsequent to a crop of pustular sudamina which had followed the normal efflorescence. The miliary eruption in cases which recovered had a desquamation of its own, which preceded that of the general skin. In a case of scarlatina sine eruptione, the student in attendance caught scarlatina of a severe type, and there was reason to believe he was infected by that particular case; and I think this one of many proofs that the *contagium* of scarlatina is by no means peculiar to the exfoliating cuticle. That, however, it is highly communicable by means of the epidermis is well known, and it seems to be transmissible by post in this manner; and, as an illustration, an abstract of a case of "scarlatina communicated by a letter" may be cited from Dr. J. W. Moore's "Report on Scandinavian Medicine."^b The author (Dr. Petersen) made the observation—in the case of a girl, aged seventeen, who contracted scarlatina without the possibility of tracing the infection directly to any person—that a friend of the patient living several miles away had had the disease a month previously, and that this friend had regularly corresponded with the patient during the period of her desquamation. The author regards it as not impossible that scarlatina may be conveyed in this way—separate, perhaps microscopical, scales being thrust off the hands on to the paper during the writing of a letter, and the infection being thus carried to the address. The popular habit of immediately burning letters received from a house in which there is infectious disease as soon as read is not to be discountenanced.

^a Niemeyer. Pract. Med. Vol. II., p. 534.

^b Brit. and For. Med. Chir. Review. July, 1872. P. 210.

In the case of a girl, aged fourteen,^a who had been affected with xeroderma and ichthyosis-spuria, and who contracted scarlatina immediately after these conditions of the skin had been removed, the process of desquamation was watched with interest, but it did not present any special modification over the parts which had recently been diseased. It is probable that the regeneration of the skin subsequent to the attack of scarlatina was beneficial; it is stated that ichthyosis-vera has been cured by an attack of small-pox.

The vomiting and purging in the early stage of bad cases seemed, as Dr. Graves^b has remarked, to depend on cerebral irritation and congestion, rather than upon an effort of the stomach to get rid of any offending materies morbi. A permanently contracted pupil, particularly noticed by Fothergill as a sign of bad omen, was observed in a malignant case in which hiccup occurred almost incessantly, from twelve to nineteen times in a minute. Head symptoms, such as convulsions, when apparently connected with a diseased condition of the kidneys, as evidenced by scanty and bloody urine, were treated by leeching and cupping over the kidneys, poultices, plain or of digitalis leaves, and compound powder of jalap, the head being sometimes shaved and cold lotion applied. The tendency to the head in scarlatina, affecting one subject to epileptic fits or debilitated in the nervous system, was exemplified in the case of a little girl of eight, who, from an affection of the brain at four years of age, had paralysis and atrophy of one upper extremity. She was one of four children who all had scarlatina very lightly. Immediately after their recovery they were advised sea-bathing; two of them got dropsy; the girl severe convulsions on the paralysed side, followed by coma, from which she was aroused to a state of the greatest mental activity by the application of liquor ammoniæ on a towel to the shaved scalp, but only to die, in twelve hours, of rapid effusion into the bronchial tubes. Her urine was solid with albumen, and dry cups applied over the kidneys produced highly raised blobs of serum.

Of the scarlatinal bubo—for it is an anatomical misnomer to call it a parotid swelling, since it originates below the angle of the jaw, and is due to irritation of the lymphatic glands of the tonsil, soft palate, and pharynx—three varieties were observed: those which opened spontaneously—sometimes inwardly, sometimes out-

^a See Irish Hosp. Gaz. Sept. 15, 1873. P. 280.

^b Clin. Med. Vol. I, p. 314. 1848.

wardly, or sometimes in both directions—those which required an incision, in one case two and a half inches deep, and those in which there was no indication of the formation of matter, but merely an oedematous infiltration of the parts; more than one of the latter cases died unrelieved. The buboes appeared to be a local result of the constitutional irritability of the lymphatics, and to depend upon the amount of pharyngeal ulceration, presenting themselves on the right or the left side, sometimes on both, according to the situation of the ulceration in the throat. A boy, aged nine, was brought to hospital to be treated for torticollis, which had resulted immediately after an incision, made elsewhere, into one of these scarlatinal cervical abscesses; the incision appeared to have divided the spinal accessory nerve just before it enters the upper third of the sterno-mastoid muscle, and to have paralysed both it and the trapezius of the same side. Leeching sometimes relieved the delirium in these cervical swellings, a delirium caused by the pressure of the enlarged glands upon the internal jugular vein; poultices, from their weight and pressure, were borne with impatience, and constantly pulled off; the application of wadding was more light and comfortable, but, unless in the cases which subsided spontaneously, nothing gave relief but the exit of the matter. Severe rheumatic pains in the joints were frequently observed; but, although rigors and sudden rises in temperature were observed, in no case was there any permanent disturbance of an articulation; the articular pains required opium in doses measured much more by its effect upon the pain than by the age of the patient. Pericarditis was in three or four cases detected, but proved fatal in no instance.

The oldest patient I have had in scarlatina was a policeman, aged forty-two; he was a mild case, and made an uncomplicated recovery. In a man, aged thirty-three, the scarlatina was followed by a most tedious and severe attack of enteric fever, which kept him in hospital for two months and twenty days, exclusive of the scarlatinal illness. He had left hospital, convalescent from scarlatina, eight days, when he got the initial rigor of enteric fever. In his paper on the "Relation of Scarlatina to Enteric Fever," Dr. Harley* gives five cases in which scarlatina was followed by enteric fever, as if it were a relapse, and three cases of simultaneous enteric and scarlet fevers. His previous observations on the pathology of scarlatina tend to show the similarity between the morbid anatomy

* *Med. Chir. Trans.* Vol. LV., p. 102. 1872.

of the two diseases, and to such cases he would apply the term "abdominal scarlatina." The ordinary cases of scarlatina were simply treated with dilute acids and an astringent gargle, or one of plain warm water, the throat being protected externally with wadding; catarrhal irritation of the pharynx, with a thirty-grain solution of nitrate of silver, brushed occasionally over the surface. For parenchymatous inflammation of the tonsils with ulceration of the surface, glycerine of tannin or diluted carbolic glycerine were applied. In one case in which there was genuine diphtheritic exudation, nothing dissolved the tenacious exudation and facilitated its removal from the subjacent bleeding surface like solution of lactic acid. For nasal catarrh the nares were syringed with diluted carbolic glycerine. The initial fever, when violent, was moderated with aconite. The head symptoms, such as pain, sleeplessness, delirium, and convulsions, were treated differently, according as they appeared due to the violence of the fever of invasion, to the cervical swellings, the state of the kidneys, or the malignancy of the attack. Two prime conditions of treatment appear to be a judicious dietary, excluding nitrogen as much as possible in anticipation of the detriment liable to accrue to the renal organs, and the proper use of stimulants; these latter were frequently well borne in this epidemic. The treatment was essentially eclectic, and in no respect was routine observed. In such a treacherous disease the channels buoyed and marked carefully on his charts by one pilot may prove dangerous to another who may select the same route, owing to differences in the build, and trim, and draught of the vessel to be navigated; and no disease requires more ample therapeutic resource, more constant alertness, and more careful independent judgment in its management, than does scarlatina.

ART. XIV.—*Notes of Surgical Cases.* By MR. E. STAMER O'GRADY, M.R.I.A., Ch.M., M.B., A.B., Univ. Dub.; Surgeon to Mercer's Hospital; Fellow and Member of the Surgical Court of Examiners, R.C.S.; formerly Lecturer on Surgical Anatomy at the Carmichael School of Medicine.

CASES OF OVARIAN DISEASE TREATED BY OVARIOTOMY AND TAPPING.

SINCE the occurrence of the cases detailed with the summary—published in last August's number of this Journal—of the known instances in which the operation of ovariectomy had been up to that

date performed in Ireland, the procedure has been had recourse to on three occasions in Mercer's Hospital. Though only one of these patients recovered, the increased proportional mortality, as contrasted with that of the former cases, cannot be regarded in so small a number as to any appreciable extent influencing the question of results in this country.

CASE I.—M. H. (No. 1,640), aged twenty-five, single, was admitted on September 2nd, 1874. The antecedents of the case appeared to be that about four years ago, subsequent to a long day's out-door work, during which her feet were constantly wet, she got what seems to have been an attack of peritonitis, and since then has never been well. The catamenia ceased about fifteen months prior to her coming to hospital, and about the same time swelling began to be observed in the bottom of the belly, and this has since been steadily on the increase. As the disease progressed, the general health became more and more impaired, the girl losing flesh, becoming enfeebled in body and downcast in mind. The abdomen measured $34\frac{1}{2}$ inches in girth at the umbilicus, $9\frac{1}{2}$ from this point to the centre of either groin, and $15\frac{1}{2}$ from the ensiform cartilage to the pubis; there was no oedema nor any indication of enlarged veins in the abdominal parietes, which seemed capable of being slid in all directions over the tumour, allowing the anterior globular surface of the cyst to be, as it were, defined quite clearly. Both lumbar regions were resonant—the areas of clearness remaining unchanged by position. The uterus was movable and healthy, and the other viscera appeared quite normal. The fluctuation wave was well marked in all directions. From the time of admission the patient had a carefully-regulated diet—an occasional warm bath being given, and the bowels kept gently acted on. There was also prescribed a ferruginous and alkaline tonic mixture. The operation was performed on the 19th, in a ward located in a detached wing of, and which was quite isolated from, the hospital proper. This had been specially and thoroughly cleansed and lime-washed. Early in the morning a light breakfast of toast and beef-tea was given, and a couple of hours subsequently some brandy. Previous to the administration of chloroform (kindly given in this and the following cases by Dr. Mason, my other colleagues, Mr. Ledwich, Drs. Morgan and B. F. McDowell, being also present, and giving their able assistance), which acted very satisfactorily, the contents of the bladder were drawn off by a

catheter, and the patient habited in the customary long woollen stockings and flannel suit. The fenestrated caoutchouc sheet was also made use of.

An incision five inches long, terminating a couple of inches above the pubis, was made in the middle line. The skin and fascia having been divided, large veins presented themselves, and could not be avoided. The bleeding, though at first free, soon ceased spontaneously, and gave no further trouble. The dissection was then proceeded with, each consecutive layer of tissue being divided on a broad flat director to the extent of the integumental cut, and the peritoneum being opened, a No. 7 short-curved steel sound (previously warmed) was introduced as a searcher, and indicated adhesions, which proved to be firm and extensive over the anterior, superior, and lateral surfaces of the cyst. These were broken down by the hand, it being necessary, however, to elongate the incision. The fork-like prongs on the side of the canula^a held the cyst wall firmly secured, the expanded hands of an assistant gently supporting the belly on either side of the cut. As the sac emptied,^b it was, for the most part, drawn out with facility, only one portion, which was of comparatively firm consistence, being composed of a congeries of small cysts, having to be lifted out by the hand. There were a few very slight and easily-separated adhesions of the omentum, as also some unimportant deep connexions to the cyst. The pedicle, a broad one and of fair length, was secured by the clamp, and the tumour cut off. Uterus and right ovary were healthy. No oozing spots were visible on any of the adhesion sites, either parietal or omental; the lacerated tags of omentum, which had been taken charge of, and, gently held by an assistant during the continuance of the operation, were now returned, the locality having been previously cleansed by soft sponges of any effused blood or fluid. The wound was brought together by seven carbolised gut sutures, which, by means of a needle at either end, were passed through from the deep aspect, thus insuring precision in the extent of the strips of peritoneal membrane to be placed in apposition. Whilst passing the sutures

^a The form of instrument curved at the part intended to be grasped by the hand, so as to bring the discharge end at a right angle with the cutting edge, thus permitting the attached caoutchouc tubing to fall straight, and without chance of "kinking" into the bucket under the table, will be found far more convenient than the straight canula usually sold.

^b The fluid evacuated was of dark-brown colour and coffee-ground appearance; it measured 7½ quarts, the more solid portions of the growth weighing 4½ pounds.

the abdominal contents were protected from any falling drops of blood by a warm soft sponge, which was removed after all the sutures were inserted and before they were tied. The cut surface of the pedicle, which lay between the lowest pair of stitches, was well cauterised. The abdomen, having been supported by broad straps of adhesive plaster, was uniformly covered with soft warm French cotton wadding, retained by a four-tailed flannel roller. The patient was now placed in the heated bed, which was in the same apartment, and 40 drops tr. of opium, with two ounces of whiskey, were thrown up the rectum. There had been no chloroform sickness, but the collapse was very great, the radial pulse scarcely perceptible at either wrist. Half an hour after the operation she was quite conscious, very restless, and very low, complaining much of a sensation of cold on the front of each knee. Hot jars had been placed everywhere around her, and to the hand of the observer the surface was fairly warm. Twenty drops of Battley and a little whiskey were given and retained, the stimulant being repeated at short intervals. She gradually became quieter and felt warmer, sleeping after a subcutaneous injection of half a grain of morphia. Two hours later there was an obvious improvement, the pulse being 98, and of fair force and character—the patient expressing herself as feeling warm and comfortable. At 6 p.m., after a pleasant slumber, she took, by desire, a little beef-tea; 6 oz. of urine removed by the catheter. When again visited at midnight her state seemed most promising; she had slept a good deal, taking the Battley and brandy at regular intervals; renal secretion abundant. Nothing could be apparently more favourable than the patient's progress during the remainder of the night; she slept well, took nourishment occasionally, and the stomach was not sick. Next morning (20th) she was remarkably cheerful, the pulse being 120, and of good character; temperature under tongue, 99°; respirations normal; no pain or tenderness of belly, either on pressure or on drawing a full deep breath; renal secretion abundant. Everything continued to wear a most favourable aspect till 2 o'clock, p.m., when the experienced and vigilant nurse in charge observed the face *suddenly* to change, the lower half wearing a deep dusky hue, the patient almost immediately becoming delirious and restless, making persistent efforts to get up. Some slight and transient rally followed very free stimulation, but relapse soon occurred again, and death took place at 11 30, p.m., thirty-six hours after the operation. Only a

partial necropsy was made; the wound was nearly united, requiring considerable force to open it; slight adhesive peritonitis existed in the immediate neighbourhood of the cut. There was a very little reddish serum in the pelvis, but there had been no hæmorrhage. The thoracic or cranial cavities could not be examined.

It may not be out of place to observe that at the time of this operation there was on the front of my right wrist a very minute abrasion, which was not the seat of any annoyance, and had, in fact, been scarcely observed. This began to tingle smartly when touched by the local fluids; in a few hours it had become very painful, and speedily ran into a severe attack of anthracoid inflammation (accompanied by much constitutional disturbance), which was only relieved by the free use of the knife. The healing process was slow, the cicatrix long remaining prominent and indurated.

CASE II.—Mrs. W. (No. 1,665), aged thirty-one, mother of a healthy child of thirteen months old, was admitted to the hospital, October 1st, 1874. She stated that *she had first noticed swelling of the belly and lower extremities eleven months before the birth of her child, and that six days after that event she was tapped—twenty-seven pints being taken away.* Subsequent to this she enjoyed an interval of fair health, but owing to re-fillings had to be tapped twice again before coming to Dublin. On the occasion of the last tapping, Mrs. W. was in Limerick, where her husband had then a temporary engagement. The operation this time was done by Dr. Bernard Kavanagh, who kindly gave me much valuable information regarding the treatment and progress of the case whilst under his own immediate care. The quantity removed by him was five gallons. Subsequent secretion was very rapid. The distension when she came to Mercer's was extreme, bulging out the lumbar regions. Only on the right side, and that but obscurely, could any intestinal resonance be elicited. The girth at the umbilicus was fifty inches, and owing to the attenuated state of the poor woman, worn down by protracted suffering, the abdominal swelling seemed far larger yet than the value of the absolute measurement. The fluctuation wave was very distinct throughout. The superficial, epigastric, and other veins on the surface were much enlarged and tortuous. In general appearance the case bore a strong resemblance to one of ascites. The day but one after admission—being exactly five weeks since the last tapping—the increasing dyspnœa became so extremely urgent that this operation

had to be repeated in the afternoon. A medium-sized trocar was used, inserted through the cicatrix of the last puncture; more than twenty-five quarts of a *brownish* fluid were taken away. During the evacuation the abdominal parietes were kept uniformly compressed by the split sheet, which was subsequently pinned on so as to afford the requisite support. Much depression, accompanied by sickness of stomach, supervened, and continued through the night, after which the patient rallied well and rapidly, and in a few days was well enough to allow a vaginal examination to be made. The uterus was shown by the sound to be drawn over to the right side, but no evidence appeared of any further complications. The cyst was rapidly re-filling, and the woman, not being able to take a sufficiency of nourishment, grew daily weaker. A ferruginous tonic, and keeping the bowels gently free, seemed to be of some service.

Ovariectomy was performed on the 13th, the preliminaries and accessory details being similar and in all respects as sedulously attended to as in the preceding case. The abdominal parietes proved to be so attenuated in the middle line that *the first gentle application of the knife divided all the structures, and fully exposed for some length the surface of the cyst.* The warmed steel searcher passed freely up on the left side, but on the right, above and anteriorly, indicated the presence of adhesions; these proved to be extensive, but gave way easily, with the exception of two spots, where they were firmer, and necessitated the elongation upwards, to a total length of over seven inches, of the original incision. There were no posterior or deep adhesions, and the cyst when emptied, as in the last case, was extracted without difficulty.* The pedicle, unusually broad and vascular, had to be split, and each part secured by a separate clamp. To the faces of both portions of the stump the actual cautery was, after removal of the tumour, applied. A couple of bleeding spots on the parietes were also touched with the pointed cautery, which at once stopped the oozing. The wound was closed (eight sutures being used), dressed, and the same immediate after-treatment adopted as in the antecedent case.

Mrs. W., though not in pain, was extremely restless for some time after being placed in bed, and the stomach was sick. A

* The fluid on this occasion was altogether of the *light-coloured* starchy character, measured twenty-seven pints (ten days' secretion); the sac, with congeries of smaller cysts (the contents of which varied, some containing a white, thick, and excessively vesical albumenoid material; others a deep brown fluid; and others, again, solid matter), weighed one pound fifteen ounces.

subcutaneous injection of half a grain of morphia was given near the ensiform cartilage; soon after this she became easier. Four hours after the operation she had rallied well, and, awakening from a quiet slumber, was collected and very cheerful; pulse, 86. The catheter was passed, by desire, and drew off over two ounces. During the day she seemed to do well, save for the repeated vomiting—everything given by the mouth being rejected; the only relief to this sickness was for about an hour after each subcutaneous injection. These were given every third or fourth hour as indicated. As the evening advanced the stomach became quieter, the patient being, at the midnight visit, in a satisfactory state, feeling and looking cheerful and hopeful; renal secretion abundant; no tenderness or soreness of belly either on gentle pressure by the hand or on drawing a deep breath; pulse, 120, of fair character. A good night was subsequently passed, the patient sleeping fairly, and the stomach not causing much annoyance; renal secretion abundant, with copious deposits of lithates on cooling. At 9, a.m., on the 14th, patient looked well; pulse, 100; temperature under tongue, 101° ; respiration, 18. During the day she seemed to progress favourably, the only complaint being of a tendency to "wind," the annoyance from which ceased towards evening, and an occasional inclination to sickness, *which was unmistakably relieved by the subcutaneous injection as before*; once only some acid-tasting and "bilious"-looking stuff was ejected. Milk and soda-water, also a little chicken-broth, were partaken of with relish, at intervals, during the day. At midnight visit the pulse had risen to 106; the temperature and respiration remaining as noted in the morning. When seen on the morning of the 3rd day (15th), Mrs. W. had slept a good deal. She expressed herself as feeling as if about to have a catamenial period, but otherwise well; her face, however, wore at times an anxious, unpleasant expression; the pulse had mounted to 120; temperature and respiration as before. A foul and ill-smelling reddish exudation had saturated the dressings in the neighbourhood of the wound; the tympany was abated, and was now but slight; no hiccough; no abdominal tenderness anywhere on pressure; nor did the drawing of a full deep respiration in any way incommode. The wound greatly contracted in length. The foetid dressings were removed, and three sutures—top, bottom, and middle—taken out; the integuments around the cut painted with a mixture of carbolic acid and glycerine, and dressings carefully renewed. On vaginal examination, no local tenderness could be

anywhere detected, nor fulness or fluctuation in "Douglas' space;" quantity and character of renal secretion unchanged. Hoping the stomach would now retain it, a mixture, containing quinine and aromatic sulphuric acid, was ordered, but it sickened, and the patient could not be persuaded to try a second dose; opium pills were taken and retained, as also whiskey, the latter was only taken by much persuasion. After midday, the pulse and temperature both ran up, being at 2 p.m., 134 and 102.5°; at 5 30 the figures were 140 and 103.5°. Shortly before my seeing her at this hour, Mrs. W. had complained of feeling something jump within her; immediately afterwards she became extremely feeble, soon getting unconscious, and apparently moribund; the respiration slow and jerky, and the pulse not to be felt. An enema of quinine, whiskey, beef-tea, and isinglass, was thrown well up the bowel. Aromatic spirits of ammonia, and a little strong punch being also coaxed down by the mouth. The stimulant treatment was actively continued, and the state of extreme prostration was gradually rallied from. After a short sleep Mrs. W. awoke, soon after nine o'clock, wanting to know what had been the matter, and feeling very sleepy. The pulse was now 150; temperature, 105°; face very flushed; the mouth now and then spasmodically twitched about, and simultaneously a jerking movement of the hands taking place; the enema was repeated; ice-water applied to forehead, and an ice-bag to spine. Against midnight there was an obvious abatement of the graver symptoms; the enema was repeated, and a subcutaneous injection of morphia given; this was soon followed by sleep, and when I next saw the case (2 a.m., 16th) she was breathing freely and sleeping tranquilly, save for an occasional jerking movement of the hands. At 9 a.m., the nurse reported that the remainder of the night had been got through well. On two occasions, when evidences of recurrent weakness appeared, the enema was administered; whiskey had also been taken by the mouth; the pulse was now 136; the temperature, 102.5°; general appearance much more promising; the secretion of urine very copious, and had to be drawn off every third or fourth hour, but little tympany of the belly; no tenderness anywhere; no fœtor from wound, and but little discharge—merely damping a portion of the dressings; results of vaginal examination still negative.

This condition of apparent amendment continued for some hours longer, but about 3 p.m., the nurse observed a change in the appearance of her charge. The stomach again got sick; no relief

now, as heretofore, followed a subcutaneous injection; the pulse speedily ran up to 140, the temperature being 103.5°. An "ice-bag" was, later on, tied over the stomach; it felt agreeable and gave temporary ease from the sickness, but the vomiting, or rather retching, for scarce anything came up, again returned, and resisted all treatment; it continued through the night, and quite prevented sleep. The stimulo-nutritive enemata were given at regular intervals and retained.

In the morning (17th) there was increasing weakness, but no other obvious change; later on the sickness ceased, and some chloral-syrup was given, and kept down, as also was a little fluid food. The patient passed the day, for the most part, unconscious of what was going on around her—gradually sinking, slumbering at times, and, in the intervals, very restless, perpetually working her face with curious and active contortions, lifting and depressing the eyebrows, and screwing the mouth into various shapes, the lower jaw also being wriggled about in a very extraordinary manner.* During the night the enemata ceased to be retained—Death occurred, the foregoing phenomena continuing to the end, on the morning of the 18th, 118 hours after the operation. Shortly after death, and before the body was in any way disturbed, there was discharged from the mouth a quantity of thick, black fluid, of extraordinary fœtor.

Only a partial autopsy was made. On examining the abdomen, there was no appearance of any attempt at repair of the wound; it fell open as the stitches were cut. The clamps were not, to any appreciable degree, in process of separation. There was extensive peritonitis of a low type. No blood or fluid in the belly.

CASE III., No. 1,683, unmarried, twenty-eight years of age, was admitted on the 23rd Nov., 1874. I had previously seen the patient at the commencement of the month, in the few weeks' interim there was an obvious and considerable increment of the abdominal swelling. About three-quarters of a year previously, enlargement was first noticed, beginning, the patient thought, on the right side. One spot below, and to the right of the umbilicus, has occasionally been the seat of suffering, otherwise there has been no pain. The general health is described as having always been

* The nurse, who had twenty-seven years' experience of constant duty at this hospital, told me she had never seen a patient die so. The nearest approaches to it which had come under my own observation were those phenomena which occur occasionally in typhoid fever.

good, and the catamenia regular. Patient is a tall and well-made woman, with black hair, and a somewhat coarse skin, having in places a tendency to acne, here and there of furunculoid character. In early life, so long since as to be beyond her remembrance, the right eye suffered from corneitis, probably strumous, which has left a permanent mark. Some inconvenience being caused by polypi of the right nostril, which had been previously operated on, one of moderate size was removed by a snare on the 26th. The girth of the belly at the umbilicus was forty-one inches. Intestinal resonance cannot be detected anywhere unless in the left lumbar region. On palpation the wave of fluid is fairly manifest in some directions. On the right and left sides of the swelling, there are, and patent to the hand, two masses of firmer portions. Digital examinations of rectum and vagina gave no abnormal indications, and the sound showed the uterus to be quite free. Urine normal in quantity and quality. Irritability of stomach was already present and increasing, but the health had not as yet become seriously impaired. A catamenial period, which lasted two days, occurred immediately after admission to hospital. For some weeks prior thereto, a ferruginous mixture, similar to that prescribed for the previous cases, was taken. This was continued up to the date of operation, which was performed on December 10th, all accessory arrangements and details connected with it being sedulously attended to and conducted as in the preceding cases. The stomach sickened at the commencement. Nothing noteworthy presented in the successive division on the flat director of the different parietal layers. Several large veins intervened on the fascia transversalis, and were put cautiously aside without damage. When the peritoneum was opened, the sac appeared of a blue-white colour, over the front and upper part of which the warmed searcher swept readily, being arrested, however, on the right, but passing freely between the obstruction and the abdominal wall. As the collapsing cyst, securely fastened to the trocar, was being extracted by gentle traction, with it came a considerable portion of the omentum, extensively adherent, containing large and tortuous veins; there was also a second longer but less important band which, too, contained enlarged vessels, and was, moreover, adherent to the deep surface of the abdominal parietes; this latter was enucleated off the cyst, the lacerated end being held by a colleague, as security against hæmorrhage. The broader piece of omentum was now tied firmly by a catgut ligature, and cut off close to the sac. Some serous

oozing came from the face, but the ligature held on securely. A hitch now came to the further exit of the cyst. Its bulk was somewhat reduced by perforating an inner cyst with the trocar, but the incision had to be enlarged upwards by means of a probe-pointed scissors, to the left of, and above, the umbilicus, before the deeper and firmer portions of the tumour could be delivered. This was effected by the left hand partially in the belly, behind the mass, tilting it over on edge, and so presenting a lateral and lesser surface to the wound for extraction.

In the elongation of the cut a large branch of the epigastric was divided, and bled freely, requiring to be at once ligatured. "The pedicle, of moderate substance and length, was secured by the clamp and freely cauterised after separating the tumour.* The uterus and left ovary were found to be healthy. On examination no oozing points were to be perceived on the portions of omentum; these were carefully returned, and, half a dozen points of catgut suture, inserted in like manner as in the other cases; previous to tying the sutures *a double fold of large-sized soft "drainage-tube" was cast round the pedicle, and the twin noose dropped a couple of inches into the abdominal cavity, the ends thus forming a four-strand drainage seton*, hanging out below the pedicle, and pendent between the lower suture and the inferior angle of the wound. Another noose of drainage-tube was dropped in at the top of the wound. The stitches were then tied, and the subsequent dressing proceeded with as already described, a similar immediate after-treatment being also adopted. Slight vomiting occurred soon after the patient was put to bed, but in a couple of hours she had become fairly comfortable, though complaining of pain, for which a grain of opium with a drop of creasote was given, and retained. This was repeated every third hour; a little brandy and iced-milk was also taken occasionally. The contents of the bladder were drawn off, by desire, about every fourth hour, the amount on each occasion being abundant. At 9 p.m., the pulse was 90, and the temperature was 99.5°. There was now a rapid increase in the value of both, the figures at midnight being 120 and 101.5°, and the patient complaining of not feeling as well as she previously had; during my visit she vomited freely, and with immediate relief. On the morning of the 11th, notwithstanding that only two hours' sleep

* The memorandum of the weight and measurement of contents got mislaid; the former was, I think, between six and seven pounds; the fluid contents, three or four gallons.

had been enjoyed, matters wore a promising aspect; the stomach had not been sick, and the patient felt better and stronger; the pulse and temperature were respectively 104 and 99·5°. On opening the dressings it was seen that a considerable quantity of red and very foetid fluid had drained out along the tubes, in parts saturating the dressing, such portions as were soiled were removed; the face of the pedicle stump, though it had been cauterised with the hot iron, was now pale, flabby, and foetid; solid perchloride of iron was rubbed to and dried it up, and the dressing completed; as in the other cases, a combination of glycerine and carbolic acid being freely applied. The urine, removed by the catheter, was abundant in quantity on each occasion, and had deposited lithates copiously. During the ensuing day and night there were occasional attacks of abdominal pain; opium in pill gave prompt relief, and in the aggregate a good deal of sound sleep was obtained. Stimulants were given when required; at midnight the pulse was 110, the temperature 100·5°.

Next morning (12th), though after a good night's sleep, patient was not nearly so well; face pale, and with bad expression. Pulse 120, temperature 101·5°. The lithate deposit has been diminishing, and was quite absent from the urine last drawn off. Much tympany and some tenderness at upper part of belly, but a full respiration can be made. The drainage-tubes were cut short on one side, close to the wound, and drawn out without difficulty. Local dressings as before, a mixture of quinine and hydrocyanic and dilute sulphuric acids in water ordered. Results of a vaginal examination negative. At 2 p.m., I was called to the hospital, the patient having just had a sudden change; the face was deeply flushed; she was very restless, throwing her arms about. Pulse 140, weak and irregular; respiration hurried; there was also an inclination to vomit. A nutritive stimulant enema, with quinine, similar to that already spoken of, was thrown well up; a little champagne being taken by the mouth. The surface of the belly was covered by a large hot poultice, kept comfortably in position by the four-tailed flannel bandage; for a short time matters grew worse, temporary delirium occurring, accompanied by insatiable thirst; this milk alone relieved, and though much harassed by a troublesome and constant desire to vomit, the stomach did not discharge its contents till about 8 p.m., when sudden emesis, to the extent of at least two quarts, took place, so violent and uncontrollably, that in spite of every effort to guard the patient's clothing,

it was extensively wet; she was too weak to be shifted, but was made as comfortable as possible by the aid of dry warm sheets and towels. With each renewal of the poultice it was observed that the tympanitic distension was increasing. The enemata had been given every third hour; no gaseous escape occurring on any occasion through the tube. The stomach now became very irritable, rejecting everything. At 1:30 a.m., on the 13th, there was no improvement; there was increasing restlessness, so great now that I could get neither pulse nor temperature observations. This wretched condition continued throughout the night. There was delirium at intervals; the stomach sick, or trying to be so, every few minutes. No sleep at all, except a 'few minutes' slumber between 5 and 6 o'clock a.m. Three enemata were given and retained. At 9 a.m., the face still wore its unpromising aspect; and, for the first time, the patient herself spoke despondently. Pulse 140; respiration 40; temperature under tongue 101.5°. Renal secretions abundant; no lithate deposit. On removing the poultice the belly was found to be universally sore and tender to the slightest touch, prodigiously tympanitic, bulged out, and deeply resonant under the ensiform cartilage, in the same state far down into both, particularly the right groin. Edges of the cut looked healthy, no separation of them, no discharge; the strips of adhesive plaster, long enough to get well round on the back, and broad at their ends, held firm, notwithstanding the constant poulticing; a blister 6 x 4 was placed over the region of the stomach, and the poultice re-applied as speedily as possible.

In hope that the escape of the gaseous secretion would be aided by change of posture, the girl was gradually raised into a partially sitting position, and well supported in such by pillows. A teaspoonful of a mixture of chloric ether and aromatic spirits of ammonia, in equal proportions, was given. This was retained, and repeated in fifteen minutes, and again in half an hour, and subsequently on several occasions throughout the day, with obvious and immediate benefit. The enemata were given every third hour, prior to each being injected, *débris*, and sometimes a little "wind," escaped through the tube, which, as usual, was introduced some minutes beforehand. All the enemata, except one (at 5 o'clock), were retained. Much "wind" was at short intervals eructated by the mouth. Though vomiting was frequently imminent, it did not occur. In the evening a teaspoonful of brandy was tried by the mouth and kept down; some time after a little good sherry

(which was asked for) was taken, with like happy result, and later on a little egg-drink.* The blister had "raised" well, and was dressed in due course, the large hot poultices being kept *frequently* renewed. At 9 p.m., the improvement was obvious. By desire half the yolk of a boiled fresh egg was allowed, and eaten with great *gout*. Pulse 128, and much improved in character. Respiration still 40, and temperature 100·5°. Half an ounce of brandy to be given every second hour. The semi-upright position was still maintained for some hours longer, till 1 a.m. (14th), when, finding the girl disposed for sleep, I gently lowered her (some of the pillows having been removed) into a more recumbent position. The urine last drawn off shows re-appearance of the lithate deposit. At the regular morning visit improvement in the facial aspect was well marked; the patient was considerably restored; she was reported to have slept well, though getting no opiate. Brandy or wine had to be given every second hour. There was occasional tendency to sickness, but no vomiting. The bowels had acted twice in the early morning, and the enemata were suspended since. The pulse was now 104; temperature 97°; respiration 30. She had taken the yolk of an egg, with a little bread and butter, and some tea, for breakfast. The tympany is very much less, as also the tenderness, though above and to the right side there is still marked sensitiveness to the gentlest pressure. The line of wound, when seen between the straps of plaster, seemed all but healed. A tonic mixture ordered.

From this date the improvement, though slow (occasional lapses occurring, and for several days a remarkable state of weakness and prostration taking place about 4 a.m., and demanding at that hour one, and sometimes two, stimulant injections), was progressive. Until able to take exercise in the open air the pulse usually varied from 104 to 120; the temperature from 97° to 99·5°.

On the 20th the clamp came away, the wound being almost quite healed, except about the pedicle. In consequence of a lurking tenderness on the right side, the use of the poultice had been

* By the kindness of Dr. Churchill (whom, with Drs. Kidd and Ringland, I have earnestly to thank for their unwearied courtesy in assisting me not only in the examination of these and other cases in view to determine the propriety of operation, but also for their best counsels in the after-treatment), my attention was first drawn to this palatable and agreeable drink introduced by Dr. Halahan. It is made thus :—"Egg-drink, for relieving sickness of stomach.—Beat up one egg very well, say for twenty minutes, then add, fresh milk one pint; water one pint; sugar to make it palatable; boil and let it cool; drink when cold. If it becomes curds and whey it is useless."

continued. It was left off now. An assafetida and oil enema acted gently. The use of the catheter had to be continued for two days longer.

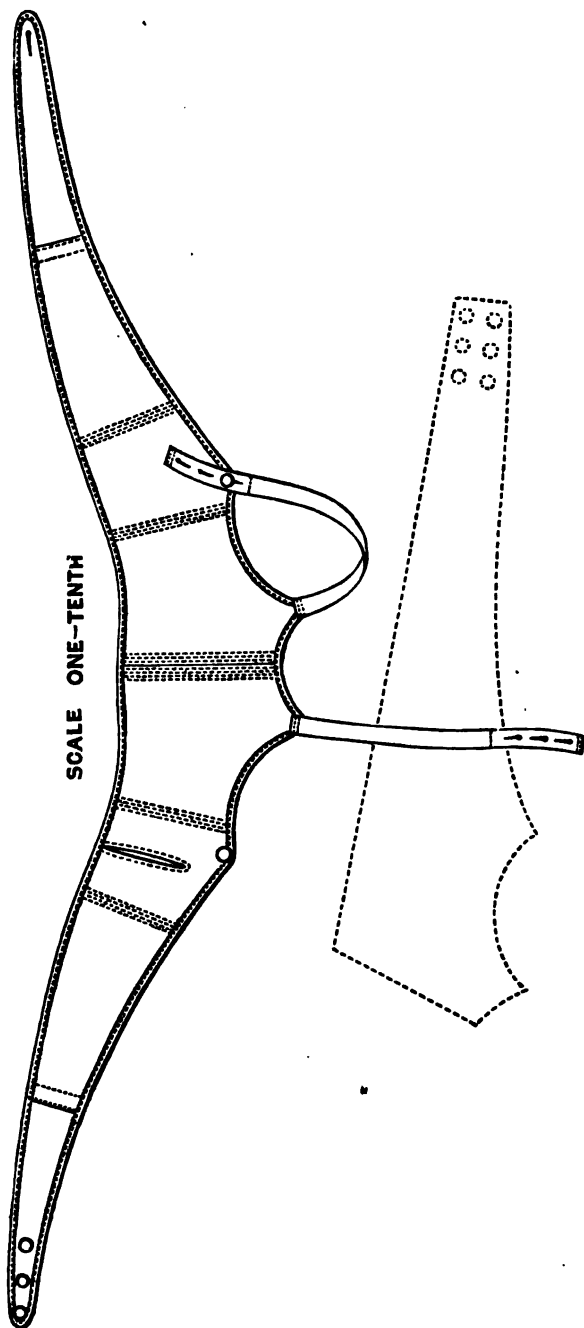
Early on the morning of the 27th (the weather being at the time intensely cold) a *severe* rigor, followed by really alarming prostration, and demanding prompt and liberal stimulation, occurred. Though no tangible consequences followed, it was deemed prudent not to let the patient rise, which by this time she seemed well able to do. There was another and severer rigor on January 2nd. Fortunately it was not either the precursor of mischief. On the 7th of this month she sat up, and on the 13th went out for a drive, some days subsequently being able to return to her home. I was glad to learn lately (March, 1875) that this young lady is now in the enjoyment of excellent health.

The accompanying woodcut shows a simple and inexpensive form of corset or support which in this and other cases has proved to be very effective and comfortable. The pattern was given to me by Mr. F. M'Carthy, an attentive student at the hospital, who was "dresser" to the above case. He informs me that it is in common use at Willenhall, in Staffordshire. The mode of application will be at once obvious on glancing at the woodcut.

The dotted lines beneath give an exact outline drawn to scale of one side of the corset, the end being shown wider than in the upper figure, and furnished with a double row of buttons—a modification which, in some cases, might be serviceable.

The report of the foregoing cases, *per se*, and in the sequences of the operation of much clinical importance, each having its own peculiar features of interest, could not, consistently with the conveyance of a correct impression of the attendant circumstances, be further condensed.

With the condition so strikingly exemplified by the case of Mrs. W.—viz., the possible occurrence, either idiopathically, but more particularly after the adoption of operative measures implicating the region of the belly, of the gravest forms of peritonitis, without any evidence whatever of pain or tenderness on pressure—the practical surgeon is not unfamiliar. In Mrs. W.'s case this feature was present in a marked degree. No part of the abdominal surface was more sensitive to the contact of the hand than it would have been in an individual in perfect health. Of the cases in which it has come to my knowledge that ovariectomy was performed in the country since the publication—in the August, 1874, number of



this Journal—of the statistics of the operation in Ireland, this woman and two others had been previously tapped. These, with the eighteen quoted in the paper alluded to, give a total of *twenty-one cases in which tapping is known to have been had recourse to once or several times prior to the performance of the major operation. Not one of these cases recovered after ovariectomy—not one of the cases in which recovery followed this operation seems to have been tapped before it.* The past experience of Irish surgeons, therefore, does not at all accord with the views inculcated by many authors on the question of preliminary tapping.

The drainage-tube used, as described in the third case, answered well, affording even freer vent to any effused fluid than the seton threads traversing the wound when the pedicle is secured (as many good surgeons prefer) by ligature instead of clamp. As seen, removal of the tubing was unattended by pain or difficulty. This simpler plan of using it appears to act quite as efficiently in securing free exit for the fluid-secretions as the possibly hazardous and certainly more complicated mode advocated by Marion Sims. The same thermometer, which was an accurate one, was used in each case—frequent observations being personally taken and carefully noted—the proximity of my residence, only a couple of minutes' walk from the hospital, affording happy facility when frequent and prompt attendance there was requisite. The exceptionally low registration of 97° in the person of the last patient continued to happen occasionally till she left hospital.

By the courtesy of a professional friend, I had the opportunity of seeing, on the night of the 17th of January, a very aggravated case of ovarian dropsy, in a middle-aged woman, mother of several children. Though dyspnoea and other effects of pressure had long caused intense distress, any interference of an operative kind had been steadily refused. The woman's hours now seemed numbered; mere palliation for the moment to the intense respiratory distress was sought. The belly was enormously distended—very probably well over fifty inches in girth—it felt hard and firm, particularly below. Fluctuation was very indistinct, some inches above the umbilicus seemed the most promising spot to tap. An oval trocar, of fair size, with caoutchouc-tube pendent at right angles, was used, and gave slow exit to but some drops of thick, glairy fluid. Keeping the canula still *in situ*, the trocar point was forced into another cyst, also a very small one. The third, however, proved to be of considerable size. Seven different chambers were thus opened

(the canula remaining undisturbed in the original skin perforation), yielding, in the aggregate, some gallons—the full of a large stable-bucket. Several varieties of fluid were evacuated from the different cysts. As the tension of the belly yielded, the more solid or iliac portions stood prominently out (large hard rocks, as it were, behind on either side), the upper part of the abdomen becoming deeply concave. To lessen, therefore, the chance of injury to important structures, the handle of the trocar was kept well depressed to one or the other side, and the deeper compartments of the cyst perforated on their lateral aspects.* After tapping, the abdomen was kept well supported by a sheet securely pinned; opium and whiskey given freely. The woman pulled on most unexpectedly, and in a few days dispensed with further professional care.

ART. XV.—*Remarks on Typhus Fever, and the Administration of Alcohol and Digitalis in this Disease.* By H. MACNAUGHTON JONES, M.D., M.Ch., F.R.C.S.I. and Edin.; Physician, Cork Fever Hospital, &c., &c.

DURING the past year, and the latter part of 1873, a large number of very severe cases of typhus fever have been treated in the Cork Fever Hospital. Though at no one time has there been an excess of such cases, yet there has been, up to the last few months, a constant supply; nearly half the cases admitted in 1874 (over 500), being “maculated typhus,” and that of an extremely malignant and bad type. The late Dr. M'Evers, who had been connected with the hospital before the famine year, remarked to me that he did not for years remember so virulent a type of fever, or one so deeply maculated as in that of the cases which were admitted during the early part of 1874. Dr. Beamish, now senior physician, commented on the same fact in the Annual Report of the Hospital just published. The length of time patients are kept at home before admission, the uncertainty of the patient and friends as to the exact day of illness, generally unable to fix any period of rigor or chill, and, as a rule, reckoning from the first day they were forced to remain in bed, and admitted into hospital mottled, renders the exact value of the day

* This precaution, in some cases, may not be unnecessary. A leading surgeon in this city assures me that he was present when a surgeon of good operative repute, whilst tapping an inner cyst during the operation of ovariectomy, actually opened the vena cava.

of the disease questionable, and it is extremely difficult to fix it with any degree of certainty.

The cases, as generally sent in, are in the end of the first, or commencement of the second week, marked with the exanthematous eruption, delirious, with some chest complication, rapid and compressible pulse, quick respiration, and high temperature. The class of patients is a mixed one, the greater proportion being very poor, who have been badly nourished, ill-fed outside, the fever contracted in over-crowded houses from contagion; the remainder, servants from private houses, clerks from establishments, tradesmen, and some few of the more respectable ranks, who take advantage of the private wards, to leave lodgings or places of business, and who pay while in hospital.

The hospital itself is most salubriously situated in one of the healthiest localities in the city, on the summit of a hill; the wards are well ventilated; there is ample cubic space—1,217½ cubic feet to each bed in the male, 1,355 in the female ward—in short, the patients are placed, as far as hygienic conditions are concerned, under circumstances, in the highest degree, conducive to recovery. The great difficulty to contend with is the nursing, educated nurses not being availed of, and those who are employed requiring the incessant watching of the resident medical officer to secure the proper care and administration of remedies which such cases demand. It is lamentable that any scruples should deprive patients, who suffer from a disease where careful and conscientious nursing is so essential, of that assistance which alone the educated lady-nurse can give. I introduce these few remarks to those I have to make in reference to this disease, in order that the surroundings of the cases, the difficulties in making observations, and the influences present in the treatment adopted, may be, perhaps, better understood. I have nothing to remark on the type of the fever further than its extreme malignancy in a large proportion of cases, and that no case is alluded to in the accompanying Table, nor was any registered as "typhus" except it presented the characteristic eruption. This I was the more particular in, as I was anxious that, in watching the action of any medicine, or determining the effects of any line of treatment, there should be no doubt as to the exact type of the disease and its specific nature. I have treated many cases during the past eighteen months, both of abortive typhus and of fever, with all the characteristic symptoms of typhus, yet without any decisive eruption; these I did not include as typhus cases. One

noticeable feature struck me in a large number of patients during the last year, and one well worthy of observation. I clearly recognise the well-marked and defined distinctions between exanthematic and abdominal typhus. I have no doubt of the distinct nature of the poison, its mode of attack, and the essentially different class of symptoms we are called on to treat, and the widely-differing pathological states in the two diseases. That any two typical cases of these diseases are as totally unlike each other as it is possible for any two diseases to be which yet have some symptoms allied. This essentially distinct nature has just been shown clearly in the case of a respectable young girl who was admitted to hospital, recovering from typical typhoid fever, and who, having been attended outside for such, was obliged by her landlady to leave her lodgings and come into hospital, as she would not permit her to remain any longer in the house; she was still passing typhoid stools on her admission, and was placed in a ward with some very bad cases of typhus, where she remained for a few days until she was removed to a convalescent ward. She appeared to be recovering steadily, when she suddenly got symptoms of malaise, had rigors about the eleventh day after admission, and passed on into typhus fever, became intensely mottled, and went through a most serious attack, fortunately ending favourably; the daily range of pulse and temperature in this case is shown at No. 51 of the Table. Not long since a young gentleman, a medical student, was admitted to hospital suffering from typhoid fever, through a most severe attack of which he passed with hæmorrhagic stools (under Dr. M'Evers' care); the attack was a prolonged one, and the patient extremely weak during convalescence, requiring an extended stay in the hospital, he being a stranger, and having no friends in this country. There were, during his convalescence, several very bad cases of typhus fever in hospital; he went out and took lodgings on the river, was out but one week when he returned with high pyrexia and exanthematic eruption; he then (under Dr. Beamish's care) passed favourably through an attack of typhus.

Yet, certain as I am that the typical cases of these affections so widely differ, I am also convinced that, in many instances, there is a mingling of the poison, a combination of the symptoms; and I believe firmly that typhus and typhoid fever, in some cases, run into each other—intermarry, if one may so say, and that this is but an exemplification of the universal effect which natural selection

exercises in disease, as in other natural processes, and evidences—in the striking changes which have, manifestly, passed over many allied families of disease, even in appreciably short periods of time—the working out of a general evolutionary law. In typhoid fever, as in typhus, any one who has habitually kept temperature charts, will be struck with this fact, that though in each disease there is a typical daily range, the continual range of typhus during the period of full development (*fastigium*), followed by the irregular yet gradual declension to defervescence; the characteristic up-and-down range of typhoid, giving the peculiar irregular marking of this disease; yet he will have charts in which this peculiarity of temperature in both diseases, in fatal and favourable cases, is partially lost, and in which the temperature lines of the two affections closely approximate. So also with the pulse, its character and frequency. So with the characteristic tongue of the two diseases, and, in like manner, the head symptoms. During the past year I have had several cases, admitted as typhus, with characteristic pulse and temperature of typhus, and the eruption well defined, yet passing ochrey stools frequently, and having the abdominal tenderness, the tongue, and absence of head symptoms so identified with typhoid. If this occurred once or twice, its very exceptional nature would but prove the complete separation there is in the case of these diseases; but I have had a number of cases which I have watched with interest through the fever, in reference to this point, and was particularly struck with the coalition that existed. I remember, some years ago, attending a person in private with Professor O'Connor, in whom every symptom of typhoid—as regards temperature, pulse, tongue, abdominal tenderness, and stools—was present, but the rash was as characteristically that of typhus as any I ever saw, and pursued the exact course of the exanthematic eruption. Nos. 18, 28, 32, 35, 36, 40, 41, 52, 57, 59, of the Table, were cases in which the intermixture of the disease was well marked. No. 52 was that of a woman admitted with maculated typhus, the typhoid stools did not appear until she was five days in hospital; she was densely covered with eruption, in fact rather livid; she finally died of hæmorrhage. On a *post-mortem* examination enlargement of Peyer's patches and deposit was found, the spleen soft, a large hæmorrhagic infarction occupying its substance. This specimen I exhibited at the local branch of the British Medical Association; no more typical pathological condition, after typhoid, could be seen following on the symptoms

during life, yet she had the tongue, pulse, and mottling of typhus. I have been struck with this coalescence of the disease in a large number of cases, and consider it a fact worth recording in connexion with the etiology and treatment of this disease. It certainly is quite possible that a person labouring under the pyrogenic symptoms of typhoid may contract the poison of typhus, or *vice versâ*, and the two diseases conjointly run a definite course in the same individual.

Whether this is always so or not I do not know, but that they do so run I am certain; not but that external influences, the circumstances or constitution of a patient, the nature of the poison or previous changes at work in the organism, may modify the symptoms produced, or determine their force and character.

I desire now to make a few remarks on the administration of alcohol and digitalis in fever. It is strange that even to the present moment physiological observers are so divided in reference to the essential points in the physiological action of alcohol, and assign to it such opposite physiological and therapeutical properties. Dr. Parkes said, in 1870, that as the narcotism and a great rise in the frequency of the heart's beats occur at the same time, it is clear that it is attributable to a nervous implication, it does not reduce animal heat (except in toxic doses), it does not arrest the metamorphosis of tissues or the elimination of nitrogenous excreta. "It appears to us unlikely that it can enable the body to perform more work on less food, though by quickening a failing heart it may enable work to be done which otherwise could not be so." Comparing it to the spur in the side of a horse—"eliciting force, not supplying it;" recognising its use in "exciting a feeble heart, accelerating a languid capillary circulation," there being "no agent requiring more skill to obtain the good and avoid the evil which its use entails," and as the result of the experiments recorded before the Royal Society, February, 1874, the conclusion arrived at was, that alcohol in dietetic doses neither lowers nor raises the temperature. The contractions of the heart were increased in rapidity and force, the period of rest shortened, this increased work being compensated for, in the case of moderate doses, by a corresponding diminution of work when the alcohol was stopped. At the same time the capillaries are dilated, and allow the blood to pass more freely through them. Taking the mean pulse of the non-alcoholic days, and contrasting it with the six alcoholic, Dr. Parkes showed (1870) how the heart performed *one-fifth* more work on the fifth and sixth days, the heart during the alcoholic period doing daily work in excess, equal to lifting

15·8 tons one foot, and the last two days, 24 tons raised the same distance.

On the other hand, Dr. Wood, in his recent complete work on "Therapeutics," quotes Dr. Franz Reigel's experiments, which go to prove that there is a slight anti-pyretic property in alcohol; he remarks on its absence in those who drink stimulants habitually, and that its anti-pyretic action is lessened by its continued administration, and he draws attention to the speedy return of the temperature to its "previous grade." He cites the experiments of Binz to show that it is not through the nervous system the alcohol acts, but that it lowers temperature by directly checking tissue metamorphosis. There appears to be a still greater variety of opinion as to its action in retarding or promoting the elimination of carbonic acid. The more important point remains—the value of alcohol as a dietetic agent.

It would be impossible, and useless, to enter into the various views put forward on this essential matter. Dr. Wood quotes Baudot, Schuliaus, Anstie, Thudichum, and Dupré, as ranged on the side of non-elimination; and he himself, it appears, strongly holds to the view that alcohol is a food, and that it is, in great part, changed in the system. Dr. Wood relies greatly on the experiments of Dr. Ford (*New York Medical Journal*, 1872), who discovered alcohol in liver tissue and the thoracic blood—corroborated, apparently, by those of Dupré and Bechamp (1873), who discovered alcohol in the urine of teetotallers, the latter in sufficient quantity to burn it. Dr. Wood concludes that alcohol "in small amount is an arterial and cerebral stimulant, increasing functional activity in the nervous and circulatory systems;" "is a food in the sense that it is destroyed in the system, and discharges a physiological office; is a retarder of tissue changes; is oxidized in the body; generates force; and considers that in it we have a means of sustaining the system during the train of an acute exhaustive disease." Dr. Wood has evidently great faith in its action in advanced cases of fever, repeating the celebrated rules of Graves, that as long as it lowers the temperature and pulse, moistens the tongue and skin, and quiets delirium, it does good; but with a bounding, rapid pulse, dry skin and tongue, a "restless" patient, stimulants do harm.*

* I believe that in the use of the term "stimulant," the overlooking of the stimulating properties of beef-tea and well-prepared beef essence has caused much misapprehension as to its proper application.

I have thus instanced one, out of the many, of the most recently-published expressions on this question. Whatever may have been the views of our celebrated Irish physician when he prescribed these rules for the exhibition of stimulants in fever, and when he recognised the absurdity of the old depletory and antiphlogistic measures, and the vital importance of support and nutriment, certain I am that with our knowledge of the action of alcohol and its questionable dietetic and force-producing value, he would have carefully qualified his directions to "feed fever," and have laid down much stricter rules and precautions for the exhibition of such stimulants than are embodied in those above alluded to. The patient whose skin is moist, whose tongue is not brown and dry, whose pulse is not rapid, or temperature increasing, and whose brain is quiet, had better be let alone; the exhibition of alcoholic stimulants to such a one appears to me fraught with danger, and to push their use until these common attendants on their administration manifest themselves (when, in a large majority of cases, a patient may be guided through even a bad type of fever without them), seems to me rash in the extreme. If we have "to apply the spur to the side of the horse," let us, at least, not waste his energy and exhaust his force before both are required for a final effort, and at a time when he is straining his utmost to win the race for life, assisted by his own mettle, neither over-weighted by useless material, or irritated by incessant applications of the stimulating whip. True, it does not appear, from any experiments hitherto made, that the temperature or respirations are increased by the exhibition of small doses of alcohol repeated, but we know that the heart's beats are, and the surplus force elicited must find some correlative expression, and though as heat, that manifestation in a condition of health, as indicated by a thermometer, at the surface of the body, may be slight; yet it appears to me that in such a disease as fever each additional action will partly find its equivalent in heat generated, and so, at least, assist in maintaining and not lowering the temperature. The internal work done by a man's heart has been calculated at 500,040 pounds out of the 1,610,206 of total work done by the body in twenty-four hours; this is entirely dependent on the force and frequency of the movements performed by this organ. It appears manifest that an agent which can materially increase this work, alter its character, or misdirect its expenditure, laying aside its effects on the heat generated by this elicited force, must be very cautiously administered.

We may, I believe, as far as our present knowledge enables us to judge, conclude that alcoholic stimulants in fever, are useful to keep up the calorifying process, where the tendency (as in many cases of fever undoubtedly is the case) is to a great depression of temperature, and consequent death (*vide* Carpenter 488, 7th edition). In this condition of impending exhaustion, with low temperature and inability to generate heat, stimulants undoubtedly are our sheet anchor; and they enable us, when we see a patient threatened with a complete consumption of the normal body-force, to elicit, by the powerful stimulus given to the nervous system, that which is latent in the system, and so to tide over a period of unusual demand, which may prove too much for the over-taxed organs; thus we gain time both for the exhibition of remedies, and also to administer true force-forming nutriment and support.* The following brief classification of the cases contained in the annexed Table will show those who took stimulants or otherwise:—

Cases 1 to 47, inclusive.	No stimulants ; digitalis.
„ 48 to 57, „	Stimulants and digitalis.
„ 58 to 62, „	No stimulants and no digitalis.

These cases have been treated in the year 1874, and some few in 1875. Since June, 1873, I have been gradually relinquishing the use of alcohol in fever, in the Fever Hospital.

In June, 1873, I treated the first case of severe maculated typhus (which I then thought I had the temerity to treat) without stimulants, and by means of digitalis. Since then I have gradually been diminishing the use of stimulants, until of late, I administer them as the rare exception in typhoid, and in a limited class of patients in typhus. I have selected these charts out of a number, as they have been accurately kept, of patients treated in the year 1874 or 1875. Each thermometric observation has been the result of about ten minutes retention in the axilla; several have been tested with two thermometers. They are, I regret to say, but daily ones, inasmuch as time did not permit to secure more than a daily range, and I preferred, for uniformity sake, to omit those in which observations were more frequently made; in addition I conceive that, practically, the temperature range is sufficiently indicated by the daily rise and fall, in the majority of cases. They

*See an able article on "Body-force and Stimulants," British Medical Journal, December 12th, 1874.

include nearly the entire cases of typhus fever, which, up to the present, I have treated with digitalis, and without alcohol. I may here say that I was first led to give digitalis a fair trial in fevers, by reading the able papers of Drs. Little and Grimshaw, read before the Society of the College of Physicians, Dublin, 1873, and their remarks on its action on the failing heart of typhus.

The following is a brief tabular statement of cases treated from June, 1873, to February, 1875, and of the mortality:—

Total number of cases treated,	-	-	310
Total number of deaths,	-	-	18
Total number of patients who got brandy,	-	-	32
Total number who got claret,	-	-	58

That is, 220 got no stimulant; 277 no stimulant except claret.

Total number of typhus patients treated,	-	110
Total deaths of typhus,	-	11

Of the remaining deaths, the causes were—

Meningitis,	-	-	-	-	1
Delirium tremens,	-	-	-	-	1
Typhoid fever,	-	-	-	-	2
Spinal disease,	-	-	-	-	1
Rheumatic fever,	-	-	-	-	1
Pneumonia,	-	-	-	-	1
Total,	-	-	-	-	18

Of the fatal cases of typhus several had been ill from ten to fourteen days previous to admission; 1, aged sixty, ill fourteen days on admission; 2 were between forty-five and fifty; 2 were marked "hopeless on admission" in the hospital book; 2 were confirmed drunkards outside, and admitted partly suffering from the influence of alcohol as well as fever; 1 died at forty-five, with profuse uterine hæmorrhage, which carried her rapidly off; 1 died of chest complications, after a protracted illness, and the history of previous lung disease.

If we deduct, then, from these eleven cases, the two marked "hopeless on admission," the mortality is reduced, in the typhus cases, to 8 per cent., and the mortality in all other cases to $3\frac{1}{2}$ per cent. Of the entire 110 typhus cases, 26 got brandy, the remainder got no stimulant, or, if any, some claret. I find, on

examination, that brandy was administered at some period of the illness in all the fatal cases of typhus, except two, as follows:—

	1	2	3	4	5	6	7	8	9	10	11
Days Brandy was commenced	1st day	2nd day	2nd day	4th day	2nd day	2nd day	5th day	3rd day	3rd day	—	—
Time in Hospital before death	Lived 24 hours	9 days	5 days	6 days	4 days	3 days	11 days	9 days	9 days	17 days	18 days

In the 11th case no stimulants were given until the day before the termination of the case, hence I do not include it.

There were also a large number of typhoid cases treated without stimulants and with digitalis—generally, however, in combination with quinine and Dover's powder, and many without any special medicine; these I did not include in the Tables, inasmuch as I did not wish to complicate matters. I lost but two cases of typhoid, and as most authorities are now agreed on the milk treatment of typhoid, I did not look on the question of the administration of stimulants in this form of fever as of such importance as in typhus. Yet, I may say, that in both the cases of typhoid that proved fatal, No. 52,* and the following (in which the temperature was very high), digitalis was used, and omitted on apparently producing no good effect. In both, stimulants (brandy and claret) were employed:—

Daily Range of Temperature in No. 2 Fatal Case of Typhoid.

Temperature .	104	105	105·2	106	106	106·2	105	105·1	104	103	102
Pulse . .	108	108	112	108	112	108	126	130	130	130	130

Uncertain of exact day on admission.

Of the entire number of cases treated without any alcohol, 2 died of typhus fever; no case treated with digitalis and without alcohol died out of the number so treated (about 50); 2 died who got both digitalis and alcohol; 7 died who got alcohol, and no digitalis. Nearly the entire of the accompanying charts were taken in the latter part of 1874 and the first two months of the present year, for though I had frequently used digitalis during 1873 and 1874, it was chiefly in the last six months that, having abandoned the use of alcoholic stimulants in a large majority of cases, I determined to try the effects of digitalis by itself.

* Complicated case of typhus and typhoid.

I will briefly now record the opinion I have formed of the use of digitalis in fever, from its administration in a large number of cases. It is not necessary to say a word on the action of an agent, the effects of which are so thoroughly understood, and when its mode of action has been (as a cardiac stimulant) so fully investigated by Traube, Pelikan, Dybkowsky, Fothergill, Handfield Jones, Fuller, Ackermann, Malan, Boehm, and others. The treatises by Fothergill and Lauder Brunton will well repay perusal, explaining thoroughly the action of digitalis on the cardiac inhibitory apparatus, and also the cardiac ganglia. "The following proposition," says Dr. Wood, "expresses our present knowledge, and probably is very near to the truth. Digitalis, in moderate doses, stimulates the musculo-motor portion of the heart (probably its contained ganglia), increases the activity of the inhibitory apparatus, and causes contraction of the arterioles." I believe that the experiments of Eulenburg and Ehrenhaus, as mentioned by Dr. Fothergill, have put it beyond question, that, independently of any action which digitalis may have on the inhibitory apparatus, it directly affects the rhythmical action of the heart through the cardiac ganglia. That digitalis has the power of steadying the pulse, rendering it firmer and less compressible, has been for some time known, its dangerous effects only becoming manifest when it is pushed too far, or toxic doses administered. Then the arterial pressure falls, and the pulse passes from the slow and steady to the rapid and weak. It is clear that in typhus the inhibitory action of the vagus must be lessened; so also the rhythmical power of the cardiac ganglia is interfered with. This is shown by the rapid and weak action, by the character of the pulse; there is a diminished arterial pressure and tension. Dr. Grimshaw, of Dublin, drew attention to this fact, in connexion with the action of digitalis, so far back as the year 1867. As it is universally agreed that digitalis possesses, in therapeutic doses, the property of exciting the inhibitory action of the vagus, and of increasing the arterial pressure, we might naturally assume that, in such a disease as typhus, with its quick compressible pulse, it would be indicated; but, again, it appears to me that the result to be desired from the administration of a drug in typhus would be the consequent diminution of the internal work done; a conservatism of force and prevention of waste. I cannot reconcile increased action of the circulatory and respiratory organs in consequence of an abnormal stimulation without a correlative manifestation in an evolution of heat, and I take it that, in many cases of fever,

in which the temperature, towards its termination, is gradually lowered to a dangerous degree, or suddenly falls, it is because not only has the natural body-heat been expended, but its latent reserve fund has been encroached on, its force, represented as heat, is exhausted, and there is no power in the system to elicit it. To enable the body, with the least expenditure of force, to tide over its period of extra work, to modify and restrain the general process of combustion, which is taking place in excess, must be our object. In fever the question is—does digitalis assist us to do this? I believe it does. I am not surprised that digitalis, in toxic doses, raises the temperature; here we are brought again to diminished arterial pressure and a rapid pulse; as in typhus fever, the balance between the musculo-motor power of the heart and the inhibitory apparatus is upset, and from this rapid action we might, I think, expect a rise in temperature. Does clinical experience show that digitalis has this direct antipyretic effect? Wunderlich, our greatest modern authority on the temperature in acute disease, states that it has a decided antipyretic value in typhoid fever; and we know that it has been given as an antipyretic in other acute diseases, as well as in fever. I have given digitalis, *watching carefully its effects on the temperature*, in over two hundred cases of acute disease—simple fever, typhus, typhoid, pneumonia, pleuro-pneumonia, delirium tremens, remittent fever, &c., by itself or combined, and I have no doubt of its antipyretic properties. That these will be manifested suddenly, or follow immediately on its use, or that they will be apparent in every instance of the administration of the drug (no more than the effects of any other medicine, when given in moderate doses, invariably follow) is not to be expected. On the contrary, its mode of action is subject to great variations in this respect, in different patients, and often in the same patient. A glance at the daily range of the temperature in the annexed cases, in which digitalis was administered in typhus, will show this. I would say that its antipyretic action, as shown by a characteristic fall, in many cases, is uncertain, or there may be an unaccountable rise during its administration, and a corresponding fall subsequently. Yet that it influences the temperature, in some cases, rapidly, in others slowly is to my mind, beyond a doubt. I would not expect, from what we know of the physiological action of digitalis, a very marked and decided fall in temperature, though I have frequently seen this, and at periods not connected with defervescence; what I would rather hope would

be a restraining power, a limiting of the range, a gradual, but marked fall, and this is exactly, in the majority of cases, what clinical experience has shown me is the case. Any one who compares a number of charts of cases in which such an antipyretic as quinine or nitrate of potash (in large doses) has been given, with those in which digitalis has been used, will at once be struck with the difference in their action—the marked dip in the one and sudden fall, with corresponding diminution of pulse-beats, the gradual decline of the other, with an equally slow reduction of the pulse. Briefly, I may summarise my experience of its use in typhus thus:—

1. *Pulse and Respiration.*—It has (not constantly) a well marked effect in changing the character of the pulse, strengthening it, improving its tone, rendering it less compressible, at the same time that it gradually lowers it, and, if pushed for a lengthened period, generally reduces it to between 40 and 60; this result being obviated by watching the temperature, and ceasing the administration of the medicine on its marked reduction; never exceeding moderate doses of the drug, and repeating these at intervals dependent on *the general condition of the patient.** The respirations, as a rule, decrease with the pulse.

2. *Temperature.*—It appears, in a large majority of cases, to perceptibly effect the temperature within two days after its administration, in moderate doses—say twenty drops of tincture, or half an ounce of infusion or both combined—every three or four hours (I generally give twenty drops of chloric ether with it, as I find that this renders it more tolerant to the patient); the reduction of temperature will, to a great extent, depend on the quantity of the drug administered and its regular exhibition; the rise or fall being materially influenced by the continued use of the drug night and day. In a large proportion of cases I treated, it was not given at night; in some it was, and in these latter the characteristic action was much more speedily manifest. In some cases this effect on the temperature is not so apparent; this I notice more particularly in cases with very heavy eruption, also in fatal cases; in others great variations in the temperature, without any apparent cause, take place during its

* I regret that time did not permit me to make many sphygmographic observations, but in cases in which I noted the effect of the pulse under digitalis, the results corresponded with those in the published tracings of Dr. Grimshaw, in the June number of this Journal, 1873.

administration. On young patients its action is particularly marked as a rule.

3. *Length of the Fever.*—I cannot say that it appears to decidedly influence the duration of the fever; in most of the cases in which I administered it, the fever was not of long duration, a large number terminating from the fifteenth to the eighteenth days.

4. *Nervous System.*—This was one of the most marked results. There appeared, in a large majority of the cases, to be complete immunity from delirium. I had only two cases, during the past twelve months, treated with digitalis and *without alcohol*, in which there was what I would term “high delirium.” Most of the cases went through the fever quietly, and there was a marked contrast to those in which I had been in the habit of giving the latter.

5. *Tongue and Skin.*—The tongue (particularly in those cases treated without alcohol) was moist in nearly every instance, and there was a noticeable absence of the hard, brown, and dry tongue, so characteristic of this affection, especially when wine is administered. I could not say that there was any marked effect on the petechiæ, save their early disappearance in a large number of cases; this, however, might only be coincident on their favourable course and termination. I was also struck by the absence of critical sweats.

6. *Urinary Secretion.*—The secondary effect of digitalis on the kidney was apparent in the free secretion of urine in nearly all the cases treated with it. In cases treated without alcohol, with or without digitalis, I found convalescence quicker, less consequent debility, and I believe with Dr Grimshaw, that the administration of the digitalis lessened the necessity for alcoholic stimulants of any kind. In few of my cases did it produce vomiting.

Conclusions.—On the whole, then, I have arrived at these conclusions:—

1. That in the treatment of fever, typhus and other forms, too much reliance has been placed on *alcoholic* stimulants, and that fashion, rather than reason, has swayed many in their *indiscriminate* employment.

2. That the per-centage of cases requiring such stimulants is a low one; and that while our administration of them, as regards

quantity and kind, must depend entirely on the condition of the *patient*, still the utmost caution (with our present knowledge of their physiological action) is required.

3. That in digitalis we have a powerful cardiac stimulant, which, while it gives force to the heart, does not do so at the expense of the system, but rather is a conservative agent, which controls expenditure and limits waste of vital action—always, of course, remembering that a large number of cases will recover without any specific treatment, save that care and guidance which provides for the wants of the system, and secures the patient from the risks of complications. That digitalis appears to be indicated in the early periods of many cases of typhus in which we have a rapid pulse and high temperature range, regulating our administration, by its effects on both, using it, rather, with the object of guiding the patient up to a certain point, than of curing the disease.

I wish, especially, to thank Dr. G. P. Atkins (now of Cork-street Hospital), and Dr. J. Adderley, our resident medical officer, for the care and trouble they both have taken in superintending the thermometric observations, and watching the cases during the administration of digitalis.

Cases Treated without Alcohol and with Digitalis.

No.	Age	Disease	DAYS OF DISEASE																		Digitals Days
			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
1	4	Typhus	Temperature Pulse	— —	— —	— —	103-2 120	103-3 132	102 120	101 108	101 108	99-1 96	98-3 96	— —	— —	— —	— —	— —	— —	8 to 12	
2	8	Maculated	Temperature Pulse	— —	101 120	103 120	104 120	103 120	101 120	101 120	99-3 108	98-4 108	98-4 108	97-2 96	— —	— —	— —	— —	— —	8 " 12	
3	8	"	Temperature Pulse	— —	— —	— —	— —	— —	104 120	102 126	104 132	102-3 132	101-1 108	98-3 100	98-2 84	— —	— —	— —	— —	10 " 13	
4	9	"	Temperature Pulse	103-1 100	103-1 100	103 108	103 108	100-3 108	102 108	100 108	103 108	100 84	98-2 84	— —	— —	— —	— —	— —	— —	6 " 11	
5	9	"	Temperature Pulse	102-2 108	102-1 108	101 108	100 108	99-2 96	99 96	98-2 84	— —	— —	— —	— —	— —	— —	— —	— —	— —	5 " 9	
6	10	"	Temperature Pulse	— —	— —	— —	— —	104 144	101-2 144	101 120	101 108	98-2 96	99 96	— —	— —	— —	— —	— —	— —	9 " 11	
7	10	"	Temperature Pulse	— —	— —	— —	— —	— —	— —	105 110	102-4 108	101 108	99-4 84	98-2 84	— —	— —	— —	— —	— —	11 " 13	
8	10	"	Temperature Pulse	— —	— —	— —	104 120	102 120	102-3 120	104 120	103-3 120	102 108	101 108	99 100	— —	— —	— —	— —	— —	8 " 13	
9	10	"	Temperature Pulse	— —	— —	— —	— —	104 144	102-2 144	101-1 120	101 108	98-2 96	99 96	— —	— —	— —	— —	— —	— —	10 " 12	
10	11	"	Temperature Pulse	102 108	103-2 108	102 108	102 108	102-3 120	103 108	101 96	101 96	99 —	98 —	— —	— —	— —	— —	— —	— —	6 " 11	
11	11	"	Temperature Pulse	— —	104 108	104 108	104 100	104-1 100	103 100	103-2 96	101 96	99-1 84	98-3 —	— —	— —	— —	— —	— —	— —	7 " 11	

12	11	"	{ Temperature Pulse	104-2 120	103-4 120	103-4 100	103-4 100	104-1 100	103 104	104 108	103 108	102 108	102-3 108	100-2 108	98 96	97-4 84	98-2 48	99-2 44	100-3 44	98-4 —	5 to 14
13	11	"	{ Temperature Pulse	—	—	—	—	105 144	104 130	103 140	101-1 110	101 110	101 110	99-1 96	—	—	—	—	—	—	9 " 13
14	12	"	{ Temperature Pulse	—	—	—	—	105 120	104 120	103 108	103 96	102 96	103 96	100-1 98	99-1 84	98-2 84	—	—	—	—	8 " 13
15	12	"	{ Temperature Pulse	—	—	—	—	102 130	102-2 120	102 108	100-2 96	99 84	99 84	—	—	—	—	—	—	—	9 " 12
16	12	"	{ Temperature Pulse	—	—	—	—	104 120	102-2 120	102-4 120	103 120	101-4 100	99-4 96	99 96	98-2 90	98-2 80	—	—	—	—	9 " 13
17	12	"	{ Temperature Pulse	—	—	—	—	105 120	104 110	103 108	102-4 108	102 96	103 96	100-1 80	—	—	—	—	—	—	9 " 15
18	13	"	{ Temperature Pulse	—	102	103-1 108	102-2 108	103-1 108	103-1 120	103-1 108	102-4 108	100-1 99	99 80	98-2 80	—	—	—	—	—	—	7 " 13
19	13	"	{ Temperature Pulse	—	—	—	—	104 108	104 100	103-2 120	103 128	100-3 120	100-4 112	101 112	101 112	100-1 80	99-1 80	—	—	—	8 " 14
20	14	"	{ Temperature Pulse	—	—	—	—	105 120	104 120	103 108	104 106	101 108	98-1 96	98-1 84	97 72	—	—	—	—	—	8 " 13
21	14	"	{ Temperature Pulse	103 96	104-3 96	103-4 110	101-2 120	101 108	101 108	98-2 —	—	—	—	—	—	—	—	—	—	—	5 " 10
22	14	"	{ Temperature Pulse	—	104-2 108	104 108	105 108	105 120	104 112	103-3 100	104-1 100	102 96	102 96	102 96	100 96	98-2 84	—	—	—	—	8 " 15
23	15	"	{ Temperature Pulse	—	—	—	—	104 112	105 120	104-2 120	101 112	101 120	101-1 120	103-3 120	103 140	100-1 120	101-4 96	100 96	96-2 84	99-2 84	11 " 17
24	15	"	{ Temperature Pulse	—	—	—	—	104-1 96	105 100	104 108	104-1 108	104-2 108	104-1 108	104-1 96	103 96	100 80	—	—	—	—	8 " 16

The cases marked thus (*) were of a mixed nature.

Cases treated without Alcohol and with Digitalis—(continued).

No.	Age	Disease	DAYS OF DISEASE																Digitalis Days
			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
25	15	Typhus	—	103-2 96	102 96	102-2 110	103-2 110	103 110	103 104	102 104	99 84	99 84	98-2 72	—	—	—	—	—	8 to 12
26	15	"	—	—	—	103 104	104-4 108	104-1 108	104-2 120	103-1 104	102-2 104	100-1 84	98-2 72	—	—	—	—	—	9 " 13
27	16	"	—	—	103 130	104 126	104 108	103 100	103 96	102-3 100	102 96	101-3 96	101 96	101-2 100	100 96	100 96	100-2 96	99-3 84	9 " 16
28	16	"	—	—	—	—	104 120	103-3 120	103-3 120	102-2 108	102 108	101 96	98-2 80	—	—	—	—	—	9 " 13
29	16	"	—	—	—	—	—	104 104	104 120	103 120	103-3 120	103 120	101-3 110	102 84	101 84	99 84	101-2 84	99 84	10 " 16
30	17	"	—	—	—	102 120	103-2 120	104 116	103 116	103-1 108	103 108	102 108	99-3 86	—	—	—	—	—	9 " 14
31	17	"	—	103 120	103-1 120	103-3 120	103 120	104 120	104 120	103 120	103-1 120	99 96	101 96	99 72	—	—	—	—	6 " 13
32	17	"	—	—	102 120	103-4 96	101-4 84	99 80	98-2 84	98-4 84	—	—	—	—	—	—	—	—	7 " 9
33	17	"	—	—	—	—	—	—	105 144	101-4 120	101-4 128	98-4 120	98-4 120	100 120	98 120	98-1 126	98 120	98 120	10 " 13
34	18	"	—	—	—	—	103 108	103 96	103 96	104 100	102 100	103 100	103 100	104 80	101 80	98-2 72	—	—	9 " 17
35	18	"	102-2 96	104-2 100	103-3 100	103-2 108	103-1 106	103 108	103 108	102-3 100	102 100	99-2 80	99 60	99 60	99 72	—	—	—	6 " 13

36	18	"	{ Temperature	103-2	104	104	103	103	103	102	103	102	103	103	99	97	—	—	6 to 16
			{ Pulse	96	104	104	104	96	96	96	96	84	84	72	60	48	—	—	
37	20	"	{ Temperature	104	102	103	102-4	100	98-2	99	—	—	—	—	—	—	—	—	5 " 10
			{ Pulse	120	110	116	116	90	84	84	—	—	—	—	—	—	—	—	
38	20	"	{ Temperature	—	—	—	—	—	103	102-1	100	99	97-1	—	—	—	—	—	11 " 14
			{ Pulse	—	—	—	—	—	120	108	96	84	—	—	—	—	—	—	
39	20	"	{ Temperature	—	—	105	103-1	102-3	103-2	104-2	102-1	124-2	102-4	101	99	—	—	—	9 " 15
			{ Pulse	—	—	120	120	120	120	126	126	124	100	96	96	—	—	—	
40	22	"	{ Temperature	—	—	104-1	104-1	104	103-2	102	103	102-2	102-4	101	101-4	98-2	97	—	9 " 16
			{ Pulse	—	—	108	106	108	108	126	120	120	120	96	96	84	—	—	
41	22	"	{ Temperature	—	—	104-3	102-3	100-1	102-1	101-2	100-4	100-4	100-3	100-3	100	99-1	—	—	7 " 11
			{ Pulse	—	—	108	112	100	96	96	64	70	72	70	70	70	—	—	
42	22	"	{ Temperature	105	103-2	106-1	104-2	101-2	99	100-1	101	100-1	98-2	—	—	—	—	—	5 " 10
			{ Pulse	120	120	180	108	108	100	84	84	84	72	—	—	—	—	—	
43	25	"	{ Temperature	104	102	102-2	102	101	100-2	100	99-4	98	—	—	—	—	—	—	6 " 11
			{ Pulse	108	108	108	108	108	84	84	84	80	—	—	—	—	—	—	
44	28	"	{ Temperature	104-2	103-3	102-2	103	103-2	102	101	100	100	99	98-2	97	98	99	—	5 " 12
			{ Pulse	144	182	140	128	120	112	112	100	100	84	60	60	60	72	—	
45	28	"	{ Temperature	—	104	103-1	103-3	102-1	100-1	101-1	99-1	99-1	98-2	—	—	—	—	—	7 " 12
			{ Pulse	—	120	120	120	120	108	88	80	72	72	—	—	—	—	—	
46	34	"	{ Temperature	—	—	104-1	103-1	103-4	103	102-2	102-1	100-2	98-1	98-1	98-1	—	—	—	8 " 13
			{ Pulse	—	—	108	108	108	108	98	98	96	84	72	72	—	—	—	
47	35	"	{ Temperature	—	—	—	—	101	102	103	101-2	99-1	99	—	—	—	—	—	10 " 14
			{ Pulse	—	—	—	—	120	100	108	96	96	72	—	—	—	—	—	

Cases marked thus (*) were of a mixed nature.

* Complicated with extensive bronchitis, both lungs.

Cases treated with Alcohol and Digitalis.

No.	Age	Disease	DAYS OF DISEASE																	Digitals Days
			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
48	13	Typhus	Temperature 120	104.4 120	104.4 112	101 112	101 112	100 120	103.2 140	104.1 116	102.1 112	99.1 120	100.1 108	97.4 84	97 72	—	—	—	—	6 to 12
49	17	"	Temperature —	—	—	—	105 108	105 108	100 108	100.4 100	103.4 108	102 108	103 120	104 120	103 120	99.3 108	98.2 100	—	—	9 " 17
50 ^a	20	"	Temperature —	103 120	103.2 120	104.1 120	103 126	103 120	101.1 132	101 132	99.3 132	99.3 120	98 116	97 116	—	—	—	—	—	7 " 12
51	21	"	Temperature 116	103.3 112	103 112	102.1 126	102.2 132	103 132	102.1 132	102 132	103.2 144	104 144	102 144	101.1 120	99.1 112	98 96	98 90	97 84	72	7 " 16
52 ^b	24	"	Temperature —	—	102.4 108	103.2 108	103.4 108	103 108	103.3 100	103 108	104 108	105 120	100 130	101.3 130	102.4 116	104.3 120	104 120	101.1 —	—	10 " 14
53	25	"	Temperature —	104 96	103.3 96	103.3 96	103.2 104	103.1 104	103 104	102.3 108	101.4 100	101 100	99 80	—	—	—	—	—	—	9 " 15
54	26	"	Temperature 136	102.3 144	103.4 132	103.2 132	102.2 108	100.4 96	100.2 80	100 80	—	—	—	—	—	—	—	—	—	7 " 11
55	28	"	Temperature —	101 108	101 108	101 110	104 108	105 108	104 108	104 108	104 108	102.4 108	101.1 96	99.4 96	99.4 96	99.4 84	100.1 84	99.2 84	—	11 " 17
56	35	"	Temperature —	—	—	—	104.2 120	104.2 120	104 120	103 112	102.1 124	103 120	99.3 120	101.2 96	98.4 90	102 108	98.4 92	98.2 88	98.3 92	11 " 16
57 ^c	40	"	Temperature —	—	—	—	103.1 120	103.2 120	104 136	103.2 136	103 124	104.2 123	104 123	101.2 110	100.2 120	99 96	98.2 84	—	—	11 " 17

The cases marked thus (*) were of a mixed nature.

^a Fatal case, in which the petechiae were very livid, and almost a purpuric look on admission; pulse continued weak and rapid, though the temperature came down; passed bloody stools on 9th and 10th days; digitalis omitted.

^b Admitted as typhus, typhoid stools and hemorrhage on the 17th day—died.

^c About 11th day.

Daily Range of some Cases treated without Alcohol or Digitalis.

No	Age	Disease	DAYS OF DISEASE																	
			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
58	9	{ Temperature Pulse	102-2 128	103 120	102 120	102-2 120	102-2 120	103 120	102-4 108	103 104	99-4 104	98-2 100	—	—	—	—	—	—	—	
59 ^a	12	{ Temperature Pulse	—	103 96	102-2 96	102-2 96	103 96	100 96	102 108	102 108	102 108	102-3 126	101-2 120	101-2 132	102 120	103 120	102-2 120	103 120	104 132	
60	20	{ Temperature Pulse	—	—	104 108	104 96	103-2 96	103 96	103 108	104 96	104 96	101 84	101 84	99 96	99 96	98-2 84	—	—	—	
61	25	{ Temperature Pulse	—	—	104 108	103-2 96	103-1 96	103 96	104 96	104 108	101 96	101-1 84	99 84	99 96	98-2 96	—	—	—	—	
62 ^b	40	{ Temperature Pulse	—	103-2 96	102-2 108	103-4 108	100-1 108	100-2 112	102-1 100	101-4 100	103 96	102-2 100	102-2 96	102-2 100	101-3 96	103 96	100-2 108	99-2 108	99-4 100	

The cases marked thus (*) were of a mixed nature.

* Died with extensive lung complications, from which he suffered for years.

^b Uncertain of day.

ART. XVI.—*Examination of Minute Blood-stains in Medico-legal Investigations.* By WILLIAM D. HEMPHILL, M.D., F.R.C.S.I., Visiting and Consulting Physician to Clonmel District Lunatic Asylum; Surgeon to Co. Tipperary Gaol, South Riding.

THE following cases—illustrative of the important evidence that may be obtained by examining the persons of prisoners accused of murder, on their first admission to gaol, before the customary change of clothes and bathing is carried out—are, I think, worthy of record, as in the usual police investigations, very minute stains of blood, particularly on the person, are likely to escape observation, and seldom come under the notice of experts to whom the clothes and other matters are sent for examination. These are not amongst the ordinary duties of prison surgeons, and should, of course, be performed at the special order of the Crown, for the sole purpose of eliciting truth, whether against or in favour of the prisoner.

In two of those cases small stains of blood were found on the persons of the accused, corresponding accurately in position with blood that had soaked through the clothes, subsequently discovered and proved to have been worn at the time of the murders, forming most remarkable and important links in the chain of evidence.

CASE I.—On the 2nd of April, 1871, I was sent for to examine certain wounds on the hand of William Collins, and to ascertain if there were any marks of blood on his person. The accused was supposed to have murdered John Ryan, who was found with two fearful gashes in his throat, and the commissures of the lips cut open at each side as if to force the deceased to open his mouth. I found a small spot of apparent blood on the left knee, and on the leg, about four inches lower, two small stains, striated, as if impressed by some coarse fabric. I removed these stains on damp blotting-paper for analysis. I found two wounds on the left thumb, one on the dorsum, one and a half inches long, half an inch wide; the other smaller, on the outside running diagonally; the skin was evidently torn from the surface, and part of the wound on the dorsum was cut perfectly square and sharp, about the width of an ordinary incisor tooth, and having a tongue of cuticle attached at one side, torn off as far as the insertion of the nail.

On the day following, a small substance soaked in spirit, which had been found between the front teeth of the murdered man, was

sent to me for examination. I put it into tepid water, and on laying it out found that it corresponded exactly in shape with a portion of the upper wound, the clean cut corresponding, and the tongue of cuticle falling accurately into its place when laid on the wound. Some difficulty arose, as, if the deceased had a perfect set of teeth, both wounds could scarcely have been caused in their relative positions, and I obtained permission to exhume the body, and make a cast of the mouth, for the purpose of removing any doubt. I did so on the 26th of April, and found some of the upper front teeth wanting, and the eye-tooth with a sharp edge standing alone, corresponding exactly in position with the lower wound, the centre lower incisors, from between which the skin was taken, being in the position of the upper wound. Some days subsequently the trousers of the prisoner were found, the left leg extensively stained with blood; and in places corresponding accurately with the stains on his leg, a few spots had soaked through. The skin and blood were microscopically examined by the late Professor Blyth and myself, and proved at the trial to have been human skin and mammalian blood. The unfortunate prisoner was convicted and executed, having first confessed his crime.

CASE II.—In April, 1872, a shirt and other articles, belonging to William Curtin, were sent to me for examination. He was supposed to have strangled an old bed-ridden man for the purpose of robbing him. The only marks of blood found on deceased were evidently forced from his nose in the struggle. There was some difficulty in arriving at a correct conclusion, as the shirt was covered with vermin, and the usual blood-marks caused by them. However, I found several small circular spots on the front of shirt, and also on the inside of the cuffs, which had been turned up. These had all soaked through the linen from the outside, in some places through several folds, and could rationally be explained by the man's giving a violent forced expiration through the nose in his last agony. Curtin pleaded guilty to the robbery, and was sentenced to penal servitude.

CASE III.—On August 24th, 1874, I was called, by the County Inspector, to examine the person of John Russell, accused of murder. Found on front of left thigh, above the knee, a space that had been recently washed. On examining with a lens, found minute traces of blood in the furrows of the skin; these I removed

for examination. Some small marks on hand and neck, as if he had been wounded slightly, were also apparent. On the 27th of August, clothes—discovered hidden in a brake a mile or two from the scene of the murder, and proved to have belonged to the prisoner—were brought in, and (agreeing in a most remarkable manner with Collins' case) the left leg of trousers was covered with blood, a portion having soaked through above the knee, exactly where the thigh had been washed; blood was also found on coat and vest. On the clothes worn by him when arrested very minute stains were found on leaf of hat, suspender, and front of stocking; these were so small that they evidently escaped his notice when changing the other clothes. Prisoner was convicted at the present assizes, and sentenced to be executed.

CASE IV.—On the 13th of January, in the present year, I was sent for to see Johannah Sexton, who was found on the road, within two miles of Clonmel, with two severe wounds in the neck; one very deep, but fortunately only dividing the muscles; the other, from which she defended herself with her hands, more superficial, but laying bare the jugular vein. A returned convict, named Ryan, was soon arrested, and I found a small smear of blood on the knuckle of the second finger of the right hand. This I removed for examination; also found some spots on the right sleeve of a flannel jacket which he wore at the time. A razor was found in his possession, which, on a casual examination, appeared free from blood, as if the wounds had been very rapidly given; but, on close scrutiny, two very minute and apparently fresh stains were found on its actual cutting edge. This man pleaded guilty, and was sentenced to penal servitude for life.

Observations on these cases seem almost unnecessary, as they speak for themselves, and are chiefly valuable as showing the very small traces of blood on the person that may eventuate in important evidence, when compared with the clothes usually concealed and subsequently brought to light through the vigilance of the police.

It now only remains to make a few practical remarks on the best method of removing and analysing blood-stains. When found on the person, they should never be removed with a knife or other sharp instrument, as the slightest abrasion of the surface would be fatal to the object in view. A glass slide, or clean white blotting

paper, moistened with glycerine and water, answers perfectly well. Various solutions have been recommended for preparing dry blood for microscopic examination; of these I believe glycerine and distilled water to be the best, but the usual proportions of three to one make far too dense a fluid. I have obtained much better results from employing a mixture in proportions of one to nine, as more nearly agreeing with the specific gravity of the serum of blood. Too dense a fluid has the effect of contracting and altering the shape of the corpuscles, while pure water, from an opposite cause, expands and ultimately destroys them; but, by using the above mentioned proportions, I have found coin-like rolls and single globules becoming detached from the mass, floating and rolling about in the fluid, and showing their circular discs, and bi-concave edges, as perfectly as if the blood was fresh, whereas the specimen under examination was from a dried stain on cloth more than six months old.

It is well to accustom oneself, in examining blood, always to use the same magnifying power—from 300 to 400 diameters answers perfectly—as the eye, becoming familiarised, finds less difficulty in detecting any deviation in size from the human standard. At the same time, it would be very hazardous, in the present state of our knowledge, to pronounce positively on any specimen whether it was human or not, except, perhaps, in favourable circumstances, with a fresh specimen, certain animals having peculiarly small corpuscles—such, for example as the sheep, might be excluded. In most cases all that we can pronounce, from microscopic examination, is that the blood is mammalian.

Another method of distinguishing blood—spectrum analysis—has achieved great success, particularly at the hands of Mr. Sorby, who has discovered the characteristic absorption bands in a quantity not exceeding the 1,000th part of a grain of the colouring matter of dried blood.

Chemical tests should always be used, as they can be applied to the minutest specimens after they have been examined in the microscope and spectroscope. Of these the most elegant and delicate is the guaiacum test, used by Dr. Day, and described in Professor Taylor's last edition.

The smallest speck of blood, visible on the point of a needle, may be placed on a covering glass, and moistened with tincture of guaiacum, freshly prepared from the interior of the resin; this gives a precipitate with the colouring matter of blood, and when to this

a drop of solution of peroxide of hydrogen is added, a beautiful blue colour results. If there is enough to operate on, the blood may be dissolved in water in a test-tube, the guaiacum mixture added, then the peroxide, and when the blue colour appears, by adding sufficient alcohol to dissolve the precipitate, a still darker and more beautiful blue results. If paper is used, it should be unsized, as the size, and many other substances, strike a blue with tincture of guaiacum without the presence of blood, so that it is better in all cases to use glass, and place it on white paper, when the minutest spot of blue will become visible. I must refer the reader to the various standard works for fuller information on the different methods of blood analysis.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT CONTRIBUTIONS TO THE PHYSIOLOGY AND PATHOLOGY OF THE MIND.

1. *Mind and Body: the Theories of their Relation.* By ALEXANDER BAIN, LL.D., &c.
2. *Responsibility in Mental Disease.* By HENRY MAUDSLEY, M.D., &c.
3. *Medicine in Relation to Mind, the Pathology of Nerve-centres, and the Jurisprudence of Insanity, being a Course of Lectures delivered in Guy's Hospital.* By J. THOMPSON DICKSON, M.A., M.B. (Cantab.), &c.
4. *Annual Reports for 1873:—State Lunatic Asylum, Utica, N.Y. Suffolk Lunatic Asylum. Royal Edinburgh Asylum for the Insane. Belfast District Hospital for the Insane.*
5. *The Psychology of Scepticism and Phenomenalism.* By JAMES ANDREWS.

THE two works which appear first on our list belong to the International Scientific Series, and are therefore addressed, not merely to the medical profession, but to the public at large; and it is an interesting sign of the times to find works of this kind commanding the attention and repaying the careful study of the intelligent physician; while it is no less interesting to observe the eager demand on the part of the general public for the precise information which only the scientific specialist can supply. But not only is the practical importance of special branches of science becoming more fully recognised by the general public day by day, but scientific men are themselves attaining to a grander conception of the unity of science. There is an *entente cordiale* not only between the man of science and the layman, but between the workers in the

various branches of science. Each feels that his own investigations are necessary to consolidate the foundations of the great Temple of Truth, which all must conspire to build. He is not an isolated worker. There must be as constant an interchange of ideas between the chemist, the physiologist, the psychologist, the mathematician, and the astronomer, as there is an interchange of sap between the cells of a growing plant. If there be not, the life of science must stagnate.

In the present instance we find Mr. Bain employing the methods, and making use of the facts of physiology, to carry out his psychological investigations, while the distinguished chemist, Dr. Maudsley, starting from the facts of mental pathology, finds himself impelled to make incursions into the territories of jurisprudence, ethics, and even theology. It is emphatically an age of specialists and division of labour; but there is abundant evidence that every thinker is conscious of standing in a circle of which his own speciality is the centre, while the circumference reaches dimly out into universal knowledge. Hence the frequent confusion as to territory between the cultivators of different branches of knowledge, and the disputes which arise between them. The air still resounds with the angry cries of the combatants on behalf of religion on the one side, and science on the other—a combat which must rage until the champions learn the practical application of the fable of the gold and silver shield—the fact obviously being that religion and science, corresponding to mind and matter, are but two phases of our knowledge of that “one substance” which, as Mr. Bain says, possesses “a double-faced unity.” The dispute between lawyers and doctors respecting the criterion of responsibility, which Dr. Maudsley discusses in the work before us, is a somewhat similar one; but one which, we trust, will soon be set at rest.

In this volume, entitled “Mind and Body,” Mr. Bain discusses the question of the nature of the relation which exists between mind and body, the views herein set forth being in the main an epitome of those with which the students of the author's previous works are already familiar. He sets out with the question—What has mind to do with brain substance, white and grey? the conceivable answers to which are various, his own position being that a knowledge of the bodily workings has already improved our knowledge of the mental workings, and, as we continue our researches, will do so more and more. It may seem that we are

still very far from understanding such a complicated organ as the brain, but we may begin, not by confining ourselves to *post-mortem* dissections, but at the outworks, the organs of sense and motion, and studying their operations during life as well as their accurate medical structure—we may thus discover how they act upon the brain and how the brain reacts upon them. “Using all this knowledge as a key, we may possibly unlock the secrets of the anatomical structure; we may compel the cells and fibres to disclose their meaning and purpose.”

We cannot follow Mr. Bain, point by point, through all the series of investigations, in which he endeavours to evolve a theory of mental action from the ascertained facts of physiology. We must content ourselves with a very brief outline of his main argument. The obvious facts of every-day life tend to show that the connexion between mind and body is “not occasional or partial, but thoroughgoing and complete”—the feelings have their natural language of expression, recognised in all ages and countries. “On this uniformity of connexion between feelings and their bodily expression depends our knowledge of each other’s minds and characters. . . . In the artist’s view, the loftiest, the noblest, the holiest of the human emotions, have their marked and inseparable attitude and deportment.” These considerations have been disregarded by metaphysicians and theologians in their discussions respecting the boundaries of mind and body. A second class of proofs of the intimate connexion between them is furnished by the effects of bodily changes on mental states, and *vice versa*. The influence of body on mind extends not merely to the grosser modes of feeling, but to the highest emotions of the mind—love, anger, æsthetic feeling, and moral sensibility. “Health keeps an atheist in the dark.” The intellect is similarly affected. Sir Henry Holland lost the faculty of speaking German from great physical exhaustion induced by the descent of a mine in the Hartz mountains, his memory being restored by taking food and wine. The lives of certain individuals (martyrs and heroes, for example) present apparent exceptions to these rules, high mental energy and action being exhibited by them under bodily weakness, fatigue, disease, and old age.

The influence of mental changes in bodily states is no less remarkable. Sudden paroxysms of emotion derange the bodily functions, and the long dominance of the various passions induces such striking physical changes that the poets have frequently availed themselves of these for the purpose of personification.

Mr. Bain, then, regarding the connexion as one of correspondence, dismisses the facts which tend to show that the brain is the special organ of the mind—the relation between the size of the brain and degree of intelligence, the loss or deficiency of intellect dependent upon injury or non-development of the brain, &c., &c., the waste of cerebral substance from mental action, &c. There is, in fact, a definite relation between outward agents and the human feelings, so that, as Mr. Bain puts it, there is “*a sensational equivalent*” of heat, food, muscular exercise, sound, or light. There is, further, an accurate parallelism between mental states and their physical conditions, the mind being “completely at the mercy of the bodily condition,” as is shown by the mental symptoms of typhus fever. We think such an assertion as this is rather too sweeping. Such an accurate parallelism may exist, and the mental functions may occasionally be disturbed or overthrown by physical disease, and yet there may be a general capacity, on the part of the mind, to resist disturbance through physical disease. The supremacy of reason and conscience may finally depend upon the molecular condition of the brain, and yet reason and conscience, once fairly in existence, may have power to modify molecular change and resist physical disturbance and disease, or at least to prevent such disease from altogether sweeping them away. And though reason and conscience may occasionally suffer overthrow through purely physical means, the facts of our own consciousness tend to show that we have at length some power of altering the direction of such currents of thought or emotion as tend to destroy our mental equilibrium, even though these currents depend upon nerves of molecular change.

In his chapter on the general laws of alliance of mind and body, Mr. Bain assigns three main functions to the mind. Feeling (including Emotion), Will, and Thought, or Intellect—these, although separable by definition, being mutually inter-dependent feelings, are pleasurable, painful, or neutral. He then goes on to state the general “*Law of Relativity*,” which applies alike to our physical and mental nature. Change of impression is necessary to consciousness, which he thus impliedly defines as the perception of change of impression. But he then tells us that “*unvarying action* on any of our senses has, *when long continued*, the same effect as no action at all.” This seems rather to clash with such a definition. If consciousness be able to take note of an *unvarying* action upon a sense for any length of time, it is evident that change of impression

is not necessary to consciousness. We venture to doubt the correctness of Mr. Bain's correction of Hobbes's expression—"It is almost" (he should, says Mr. B., have said *altogether*.) "all one for a man to be always sensible of one and the same thing, and not to be sensible at all of anything." Monotony of impression tends to lower the degree of sensibility by fatigue of the sense, and that of consciousness by fatigue of the attention; but it is incorrect to call the lowered consciousness of the watchmaker, whose attention is not directed to the ticking of his watches when he is engaged upon something else, *unconsciousness*, and to say that this is produced by monotony of impression. That he is conscious of the ticking is proved by the very fact that Mr. Bain notices, namely, that if the clocks suddenly stop, his attention is directed to the fact.

In discussing the conditions of unconsciousness, Mr. Bain leans to the opinion that it is produced, not by total absence of nervous currents through the brain, but by the monotonous motion of these currents—disturbance of the monotony producing awakened consciousness. This hypothesis, like that of the total absence of nervous current, he looks upon as not yet established, the true theory being possibly different from either. The most comprehensive statement of the physical conditions of consciousness is that there is—"An increase or variation of the nerve-currents of the brain sufficiently energetic and diffused to affect the combined system of the out-carrying nerves (both motor nerves and nerves of the viscera)."

The laws of pleasure and pain are included under the general law of self-conservation:—"States of pleasure are connected with an increase, states of pain with an abatement, of some or all of the vital functions."

The exceptions to this law are that certain depressing agents, such as cold, even in moderate degree, stimulate the vitality of the system by the reaction which they cause; and that there may be not only absence of pain but the presence of great comfort on the sick bed and in the final decay of life.

Joy is connected with stimulation of the extensors, pain with the reverse.

The law of stimulation or exercise is that—"To stimulate or excite the nerves, with due regard to their condition, is pleasurable; to pass this limit, painful." Pain is produced either by conflict or by intensity of stimulation—it consists in discord or excess.

Mr. Bain applies his physical theory of pleasure and pain to the

study of prison punishment. He regards it as all but impossible to devise punishment which shall be painful and yet have no deteriorating effect on the prisoner's health. He suggests that the degree of pain to be inflicted might be graduated with the utmost nicety by means of the electric current.

He then goes on to speak of the will. Our voluntary movements, he says, take their rise in feeling, and are guided by intellect; hence "the problem of physical and mental concomitance is still a problem either of feeling or of intellect." He recognises three elements in the will; "two primitive, instinctive, or primordial, and the third a process of education or acquirement." The first of these is the spontaneous energy or surplus activity of the system—the tendency, that is, of the moving organs to operate of their own accord without stimulation from the senses or feelings. In youth there is an excess of this instinctive vital power, with a tendency to expend itself in blind activity—the surplus nerve power expending itself "without waiting for the promptings of sensation." What the second primordial element may be is not very clearly expounded; but it would appear to be the instinctive seeking after pleasure and shunning of pain. Joy causes exaltation of the vital powers, and this increases the activity that brings the pleasure. Besides these primordial elements there is that gradual direction of our activity into specific channels which is a matter of deliberate education. The will would thus appear to be, according to Mr. Bain, much like the power by which a plant turns towards the light, but with the additional factors of consciousness and reason.

We must pass by the interesting chapter which deals with the analysis of intellect, merely noticing the theory therein put forward, that association of ideas takes place by means of a physical process, by which a junction is formed between the various sets of nerve-fibres which carry the various ideas to be thus co-ordinated. We are thus weaving a veritable web of thought day after day—the association of ideas which we form persists as a potential memory, until the junction of nerve-fibres on which it depends is dissolved. From this consideration Mr. Bain concludes that the power of association of ideas, and acquisition and retention of knowledge, is limited for each brain, and that after a certain point is reached we must displace old ideas to make room for new ones. All this is, as the author admits, somewhat hypothetical and speculative.

In the sixth chapter the question as to how mind and body are

united is discussed, and the conclusions arrived at are, briefly, that we know nothing of mind apart from body, and that it is even absurd to speak of the action of the one upon the other, or to call the body the instrument of the mind, because "the physical alliance is the very law of our mental being; it is not contrived purely for the purpose of making our mental states known; without it we should not have mental states at all." Still the phenomena of mind, though so intimately connected with those of body, are entirely different in their nature; "mental states and bodily states are utterly contrasted; they cannot be compared; they have nothing in common except the most general of all attributes—degree and order in time; when engaged with the one we must be oblivious of all that distinguishes the other." It is interesting to find an author who has thrown so much light upon the physical aspects of mental science, in his ultimate generalisations, almost in spite of himself, suggesting a transcendent psychology which will give a new value to the ascertained facts of physiology. In the following passage the dry, dispassionate style of the scientific text-book blossoms for a moment into something like eloquence:—"Walking in the country in spring, our mind is occupied with the foliage, the bloom, and the grassy meads—all purely objective things; we are suddenly and strongly arrested by the odour of the May-blossom; we give way for a moment to the sensation of sweetness; for that moment the objective regards cease—we think of nothing extended; we are in a state where extension has no footing; there is, to us, place no longer. Such states are of short duration—mere fits, glimpses; they are constantly shifted and alternated with object states; but while they last, and have their full power, we are in a different world; the material world is blotted out, eclipsed, for the instant unthinkable." This reminds us of that passage in Wordsworth's Ode, in which he speaks of—

"those obstinate questionings
Of sense and outward things—
Fallings from us—vanishings."

The grand paradox which the union of mind and body presents is, that "an extended organism is the condition of our passing into a state where there is no extension. A human being is an extended and material mass, attached to which is the power of becoming alive to feeling and thought—the extreme remove from all that is material—a condition of *trance*, wherein, while it lasts, the material drops out of view."

Dr. Maudsley has written a very interesting thesis on his text—"Responsibility in Mental Disease." He begins by speaking of the erroneous notions which prevail among the public at large respecting insanity in general—the grand error being that some easily-definable line of demarcation exists between the sane and the insane, and that insanity necessarily annihilates all the ordinary motives of conduct. He then passes in review some of the mistakes in the treatment of lunatics of which history bears record, many of these being due to the spirit of religious asceticism which regarded the soul as something altogether distinct from the body, and at war with it. He supplements Mr. Bain's careful study of the relation between mind and brain by directing attention to the part which the various organs of the body play in determining mental action. "There is not an organ in the body which is not in intimate relation with the brain, by means of its parts of nervous communication, which has not, so to speak, a special correspondence with it through internuncial fibres, and which does not, therefore, affect, more or less plainly and specially, its function as an organ of mind." If one man's heart were placed within another man's body, he thinks that the circulation might be just as well carried on, yet it might make a real difference in his temper and character, so important are the waves of influence constantly proceeding from each organ.

In speaking of the important position of man as regards continuous development, he being emphatically an *educable* animal, Dr. Maudsley lays down the rule that education has its limits for each individual; the progress of even the most highly endowed is limited by the capacity of his physical nature, education having its physical side in the gradual development of the higher nerve-centres. But we do not all start fair in the race of life; and herein lies the error of those who set up a fixed standard of responsibility. Some are heavily weighted by "the tyranny of a bad organization," which no educational training can wholly overcome. A man's fate is mainly determined by his breeding. "The wicked are not wicked by deliberate choice of the advantages of wickedness, which are a delusion, or of the pleasures of wickedness, which are a snare, but by an inclination of their natures, which makes the evil good to them, and the good evil; that they choose the gratification of a present indulgence, in spite of the chance or certainty of future punishment and suffering, is often a proof, not only of a natural affinity for the evil, but of a deficient understanding and feeble will." There is, in fact, a hereditary *criminal psychosis*, which is

the mental side of an insane *neurosis*, crime being, in a numerous class, the outlet for insane tendencies. "They would go mad if they were not criminals, and they do not go mad because they are criminals."

The border-land between sanity and insanity is very vague. Many forms of nervous disease may become transformed into insanity either in the patient, himself or in his descendants. Of these, epilepsy, chorea, certain forms of neuralgia, and dipsomania, are enumerated by Dr. Maudsley—the insane temperament not *necessarily* passing into actual insanity without some determining cause other than hereditary predisposition, and this insane temperament is not without its advantages in the development of mankind. Original genius is closely connected with it. The enthusiast resembles the monomaniac in his intensity of conviction. The subject here touched upon is a most interesting one, and deserves more thought than Dr. Maudsley appears to have given it. It is quite possible that poetic or prophetic inspiration may co-exist with insanity; but Dr. Maudsley seems inclined to confound the two. No doubt, certain kinds of insanity and genius are both products of a high nervous organisation, but the one must differ as much from the other as health does from disease. It surely is not necessary that a man must be mad in order to be a great poet or a great reformer.

Dr. Maudsley divides all the forms of insanity into two broad classes—*Intellectual* or *Ideational*, and *Affective*, insanity, the first implying a lesion of the intellect; the second, which is the most dangerous, although not recognised by the lawyers or the general public, consisting in a lesion of the emotional nature. In his chapter on Law and Madness, he gives an interesting sketch of the gradual modifications which have been made in the legal attitude respecting insane criminals, from that of Lord Hale, who lays it down that the partially insane are fully responsible for criminal acts, to those of some of the American Judges, one of whom (Chief Justice Perley) instructed a jury to return a verdict of "not guilty" "if the killing was the offspring of mental disease in the defendant; that neither delusion, nor knowledge of right and wrong, nor design, nor cunning in planning and executing the killing, and in escaping and avoiding detection, nor ability to recognise acquaintance, or to labour, or transact business, or manage affairs, is, as a matter of law, a test of mental disease; but that all symptoms and all tests of mental disease are purely matters of fact, to be determined by a jury." This latter position, as recognising the difficulty of drawing

the line between sanity and insanity, and as refusing to lay down any hypothetical definition of madness, to be applied indiscriminately to all cases, Dr. Maudsley regards as being in advance of that still held in England.

The argument in favour of hanging lunatics, in order to deter others from committing murder, he pronounces utterly baseless. "To execute a madman is no punishment to him, and no warning to other madmen, but a punishment to those who see in it—to use the words of Sir E. Coke—'a miserable spectacle both against law and of extreme inhumanity and cruelty, and which can be no example to others.' And as the practice of hanging sheep-stealers did not prevent sheep-stealing, but, being one 'of extreme inhumanity and cruelty,' brought the law into discredit by offending the moral sense of mankind, so likewise the practice of hanging madmen will not really deter insane persons from doing murder, but must, in the end, inevitably bring the law which sanctions it into contempt. . . . The execution of them would be of use only if it deterred persons from going mad, which no one has asserted that it does; but the argument that it is necessary to execute them in order to protect society would be incontrovertible if society had no other means of protecting itself. But this is not so; it has the means of protecting itself effectually, and, at the same time, of inflicting upon the insane wrong-doer what he assuredly regards as a heavy punishment, by shutting him up in a lunatic asylum. There need be no fear that the prospect of such a fate would be less deterrent to him than the prospect of death on the scaffold. It will be observed that I have spoken of the punishment of death as one which should never be inflicted upon an insane person; it is another question whether such a person should not be otherwise punished under any circumstances. Abolish capital punishment, and this dispute between lawyers and doctors ceases to be of practical importance."

The greater part of the book is occupied with a description of various forms of insanity, the author seeking to strengthen his position by an appeal to the facts of every-day medical experience. He insists upon the close connexion between the *insane* and the *epileptic neurosis*, the one tending to express itself in a "convulsive idea," the other in "convulsive movement." He gives several instances of "impulsive insanity," in which the patient felt intense horror of the crime to which he was urged by the morbid impulse. In one case (given at length in his work on the "Physiology and

Pathology of Mind," 2nd ed., p. 348), an old lady was afflicted with paroxysms of convulsive excitement, in which she endeavoured to strangle her daughter, "to whom she was much attached." In another, a gentleman with a homicidal impulse used to get himself bound when he felt its approach. In a third, a young lady similarly affected was in the habit of demanding the strait waistcoat, and wearing it until the fit passed off. Many cases of homicidal mania are of the nature of marked epilepsy. Esquirol relates one in which a Swabian peasant, aged twenty-seven, who had been subject to epilepsy from his eighth to his twenty-fifth year, became a victim to homicidal paroxysms, which replaced the epileptic convulsions. "He felt the approach of the homicidal paroxysm for several hours, and sometimes for a day, before it came on, and then earnestly begged to be bound, lest he should commit a crime. 'When it seizes me,' he said, 'I must kill some one, were it only an infant.' His mother and father, whom he loved dearly, were the first victims of these fits. 'Mother,' he cried in a loud voice, 'save yourself, or I must strangle you.' During the paroxysm, which lasted one or two days, he retained consciousness, and knew perfectly that if he committed murder he would be guilty of a crime, and when he was put under restraint, made contortions and frightful grimaces, sometimes singing and sometimes speaking in rhymes. When it was over, he cried, 'Unloose me. Alas! I have suffered greatly, but I am well out of it since I have killed no one.'"

The last chapter, on "The Prevention of Insanity," is one of the most interesting in the book. "Most persons," says Dr. Maudsley, "who have suffered from the malady of thought, must, at one period or other of their lives, have had a feeling that it would not be a hard matter to become insane—that, in fact, something of an effort was required to preserve their sanity. To those in whose blood a tendency to insanity runs, this effort must, without doubt, be a sustained and severe one, being no less, in some instances, than a continual struggle to oppose the strong bent of their being. How far, then, is a man responsible for going mad?" This last question is a most important one, and the author proceeds to give it a general answer. We frequently see two persons with faulty heritage, and yet one achieves success and reputation, whilst the other ends in madness and suicide; the reason being that while the first devoted all his energies to the pursuit of a great purpose, involving self-renunciation and self-discipline, the other lives a life of idleness and vague impulse. Action of any kind which affords

scope for mental energy serves as a kind of safety-valve, so that even miserliness, religious fanaticism, and, among the lower classes, crime of various kinds, may be "a vicarious relief, a sort of masked madness." This being the case, it is evidently every man's duty to direct his energies into wholesome channels. "There can be no doubt that in the capability of self-formation, which each one has in a greater or less degree, there lies a power over himself to prevent insanity. Not many persons need go mad, perhaps—at any rate from moral causes—if they only knew the resources of their nature, and knew how to develop them systematically." Even in those who are actually insane there remains a great power of self-control, which can be called out by proper treatment, otherwise our asylums would be scenes of fury and disorder, instead of the quiet and orderly institutions which they generally are.

But, if we want to check the increase of insanity—to nip the disease in the very bud—we must go farther back. It is not sufficient to try and *educate* men into sanity; they must be *bred* sane; and yet in the present state of society, no efforts are made to insure this. Marriages are rushed into recklessly, with utter disregard as to the consequences to posterity, the sexual passion being regarded as a sufficient excuse for such self-indulgence. Still Dr. Maudsley very wisely refuses to admit that society should interfere, with rigid rules, to regulate marriages in accordance with what the moralist or the physician may regard as the dictates of reason. "We are not sure how great may be the compensating advantages of seemingly unwise marriages. It will be easier and more agreeable to admit that for the present men must go on marrying and giving in marriage without much reflection, and to 'trust the universal plan will protect.'" It is, indeed, always necessary to be cautious about uprooting the tares of society, it being so very easy to uproot the wheat also, by mistake. All that can safely be done is to lay the matter fairly and safely before young and old, to cultivate self-development and self-control by means of an improved system of education, and, as marriage is so much a thing of accidental propinquity, to keep young people, as much as possible, out of the sphere of dangerous attractions. "It is to the development of the vast amount of undeveloped mentality which there assuredly is among mankind that we may look with confident hope for the diminution in time to come of the sum of insanity upon earth."

Of the remaining volumes which figure at the head of this article

we have not much to say, even if space permitted. Dr. Dickson's "Medicine in Relation to Mind" does not appear to us to possess much value. The lectures, which were first delivered to the students of Guy's Hospital, in 1869, and subsequently modified, contain some interesting cases and observations, but, on the whole, are crude and unsatisfactory, and add little to our knowledge. The one on "The Relation of Lunatics as to Law," gives some useful, practical hints as to the legal duties of the physician who has to deal with cases of insanity, and the specimens of properly and improperly drawn certificates, given in the appendix, would form a valuable addition to a text-book for students.

Mr. Andrews's "Scepticism and Phenomenalism" is a still more unsatisfactory work. We believe the author has ideas, but the exceedingly loose manner in which he uses his terms makes it all but impossible to follow him. We can only say that we have read the pamphlet carefully and conscientiously more than once, and must confess that it remains incomprehensible by our limited intelligence.

The annual reports of the asylums mentioned above are, in the main, satisfactory, showing, as they do, that the institutions are in good working order, both as regards the physical well-being and mental discipline of the inmates.

Report on the Geographical Distribution of Fever (Typhus) in the Counties of Northampton, Leicester, Rutland, and Bucks. By ALFRED HAVILAND, Medical Officer of Health. London: J. & A. Churchill. Northampton: Mark Dorman. Pp. 11.

THIS Report will be read with interest by every sanitarian, and it is worthy of Mr. Haviland's fame as an intelligent and logical investigator of the "Geographical Distribution of Disease." It will be remembered that early in 1873 Mr. Haviland was appointed Medical Officer of Health to a combined Sanitary District in the counties mentioned above. He now shows us how well he has spent his time in thoroughly investigating the geographical features of his district, and their influence on the prevalence of disease within it.

The curious form in which this valuable Report is published

reflects the greatest discredit on the niggardly spirit in which the Local Sanitary Authorities in England, as in our own country, are attempting to carry into effect the Sanitary Laws. The delegates of the combined Sanitary Authorities, in the present case, decided not to pay the expenses of publishing Mr. Haviland's Annual Report, and he was accordingly under the necessity of reprinting it from the columns of the *Northampton Mercury*, and in the type of that journal.

The Irish Medical Directory for the Year 1875. Dublin: Offices of the "Medical Press and Circular." London: Baillière, Tindall, and Cox. 8vo, pp. 510.

THIS publication, for which many doubted a *raison d'être* when it first appeared some years ago, has secured a very considerable amount of popularity—in Ireland, at all events. The larger and more ambitious work of the same kind, with which the name of Churchill is so inseparably and so honourably associated, is, no doubt, indispensable to every practitioner in the three kingdoms. To the Irish medical man, however, the "Irish Medical Directory" is rapidly becoming equally indispensable; and the present—the fourth annual—issue, fully justifies the support which has hitherto been afforded the work. The additional matter of this year's volume includes lists of the Salaries of the Workhouse Medical Officers, and of the sanitary salaries in Urban and Rural Districts; the Public Health Act; a Complete Digest of Sanitary Laws; the Sanitary Orders of the Local Government Board; the New Rules for Government of Lunatic Asylums; Index to Acts of Parliament affecting Irish Medical Men; the Natural Mineral Waters of the World; and a Revision of the Medical Statistics of Ireland to latest date, &c., &c.

Regard being had to the enterprising spirit in which the editor has started and continued this work, we cannot but regret that so many individuals should have neglected to return the circular addressed to them. By this negligence the value of many of the entries in the alphabetical registry of names is much impaired. Surely this is not courteous conduct on the part of Irish physicians towards the editor of an Irish publication.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

Wednesday, March 10th, 1875.

HENRY KENNEDY, M.B., Vice-President, in the Chair.

A Case presenting Cataleptic Symptoms. By THOMAS W. GRIMSHAW, M.D.; Physician to Steevens' and Cork-street (Fever) Hospitals.

THE following case presented so many unusual symptoms that I consider it worth bringing under the notice of the Society, especially with a view of eliciting the opinions of the members as to its real nature. The patient was a man, John Egan, aged twenty-five years, admitted into Dr. Steevens' Hospital, under my care, on November 19th, 1874. The case had been sent to me by Dr. Moorhead, of Tullamore. The history of the case is extremely obscure, but so far as could be collected by Dr. Moorhead and his son, Mr. Moorhead, one of our pupils at Steevens' Hospital, was as follows:—The man had all his life been a tramp, obtaining his living by begging, sleeping at night under hedge-rows and hay-stacks in summer, and in barns, stables, &c., in the winter, and had been an inmate of the Tullamore Workhouse. He was pretty well known to the police of the King's and adjoining counties, but never seems to have been considered as a criminal. He was looked upon as half-witted by the country people, and treated as such by the police and farmers. As far as we could ascertain, he was always of a wretched and delicate appearance, but was not affected by the "falling sickness." Eight months before his admission to Steevens' Hospital he was found lying insensible on the roadside, and was conveyed to the Workhouse Infirmary by the police. At this time he seemed to be sleeping off the effects of an epileptic fit. On the day after admission to the Workhouse Hospital he became very excited and dangerous, so much so that he made a furious attack upon one of his companions, and had to be placed under restraint

as a lunatic. While in this state he obstinately refused food, even when put into his mouth. This stage of excitement continued for a few days, after which he became perfectly quiet, and remained in a semi-comatose condition during the day, but at night would get out of bed and steal any food he could lay his hands upon. On discovering this peculiarity, food was always placed beside him at night, which for some time he continued to consume regularly, it invariably disappearing before morning. It was during this period that he began to exhibit cataleptic symptoms, and it was found that his limbs would remain for long periods in whatever position they might be placed. He would remain sitting straight up for many hours together, and when placed on the night-chair remained as placed until his position was altered by his attendant.

His muscles appeared perfectly flaccid, showing no sign of contraction, no matter in what position his limbs might be placed. His fæces and urine were passed involuntarily, and he gradually gave up taking food of his own accord, and had to be fed with a spoon. In feeding him it was found necessary to pass the food far back into the mouth, so that it might excite the action of the muscles of deglutition by its presence. The patient would not exert himself to suck in the food when only placed between his lips. I have not been able to ascertain that there was any disease discovered in any of the organs of his body which were capable of being investigated by physical methods. His condition remained pretty much the same until his admission to Steevens' Hospital. He had, however, generally grown weaker and more emaciated, and the length of time for which the limbs could remain in any given position had diminished, and this peculiarity had ceased in the legs.

On admission to Steevens' Hospital he presented the following conditions:—Great emaciation, similar to that met with in chronic phthisis; urine and fæces passed involuntarily; slight cough, but no expectoration; eyes nearly closed, like one asleep; a superficial bed-sore on back, which afterwards healed up; remains in any recumbent position in which he is placed; swallows anything that is placed far back in his mouth.

On careful examination it was found that his pulse was extremely feeble and beat 120 per minute, at which it continued; his temperature was 100°, sometimes rising to from 101° to 102°, without any regular daily variation; his respiration from 12 to 16 per minute, and so quick and shallow as to be almost imperceptible, except when interrupted by a slight, short, soft cough; tongue normal. On attempting to raise the eye-lid, with the object of seeing the pupil, the eye-ball was turned upwards, so that an accurate examination of the pupil was never possible during his life; the pupil was, however, somewhat affected by light, and the light appeared to pain the patient. Sounds were evidently noticed, as the clapping of the hands close to the ear made him wince.

On examination of the chest, the heart-sounds were found to be distinct, but very weak. On percussion the whole of the chest was found to have less than the normal resonance, especially over the right side. On auscultation the respiratory sounds were very weak—so weak as to be scarcely audible in some parts—but no abnormal sounds could be discovered. The abdomen presented nothing abnormal. We could not collect sufficient urine to make any *reliable* examination, but such small quantities as were examined were highly charged with phosphatic deposit. Catheters were passed several times, with a view of obtaining a sufficient quantity of urine for examination, but on no occasion was any urine drawn off; it was passed as soon as secreted. The *fæces* passed were well formed, of sufficient quantity, and natural in appearance, until shortly before death, when there was diarrhoea.

Most portions of the surface of the body seemed to be much impaired in sensibility. Pinching and pricking of the hands and arms were almost unnoticed by the patient. The face, also, seemed insensible to pain. The sensation of tickling seemed to be absent in the upper portions of the body. The lower extremities retained some sensibility. The legs were withdrawn when the soles of the feet were tickled, but severe pinches, though apparently felt, did not seem to produce much pain. A hot jar, of quite too great a degree of temperature to be borne in health, produced no apparent inconvenience. The application of the electric brush (usually a very severe test) seemed to produce but slight effect on the upper, and no very great pain in the lower, limbs. Interrupted currents of electricity passed through the muscles produced little contraction of the muscular tissue, but certainly elicited some symptoms of pain, as shown by the expression of the patient's face. On passing the conductor of a Gaiffe's induction apparatus over the median nerve of either arm, and placing the other pole on the centre of the corresponding forearm, the muscles contracted violently, and the patient even gave a slight scream of pain. In no other place could similar effects be produced. The use of the continuous current gave negative results. The interrupted current applied to the facial muscles produced scarcely any contraction, and apparently no pain, even when the sponge was placed on the most sensitive parts. The brush gave the same results.

On raising the arm from the patient's chest, where it usually lay, and placing it in any position, no matter how awkward or insupportable, it remained as placed for about twenty minutes, at the end of which time it gradually began to fall, until it met with some obstruction from the bed-clothes or pillows. It mattered not how the limb was placed with reference to flexion or extension. Thus the hand might be bent as far back as possible on the forearm, and the fingers extended to their utmost, and so they would remain for about 15 or 20 minutes. The legs did not possess the same properties, and the patient would not even

remain sitting up in his bed alone, as when in the Workhouse Hospital. On several occasions the patient was temporarily roused from his peculiar condition. Once in the middle of the night he uttered some mumblings, interspersed with oaths, suddenly rose from his bed, went over to the fire, and sat down on the floor in front of the fender, remained there for some time, and on being spoken to by the nurse, returned to bed. On many occasions he talked in his sleep, when his conversation was usually of an obscene and blasphemous character, but occasionally his wanderings were of a religious turn, and his prayers most fervent. These slight manifestations of mental vitality were few and far between. On two occasions he stole bread off the stand beside the bed of a neighbouring patient. These manifestations of a desire for food induced us to try whether he would feed himself, and once or twice he took bread from my clinical clerk when it was handed to him. About ten days before his death he showed signs of recovery from the cataleptic condition. He sometimes took the spoon from the nurse and fed himself; and at last began to talk, at first in disjointed sentences, but finally in a more rational way, and sung numerous popular and comic songs, many of them of great length, and which must have required a considerable effort of memory to retain; he was especially fond of a lengthy ballad celebrating the virtues of Guinness' XX. At this period his cataleptic symptoms almost disappeared, and he continued comparatively well, taking all food given to him, and being especially solicitous for a "drop of the cratur," for which he offered to sing songs, but in a great state of debility for a week; he then gradually sank into a condition of extreme debility, which continued to increase until he died on January 25th, 1875.

The *post-mortem* examination was made about six hours after death. The body was greatly emaciated; cadaveric rigidity well marked, particularly in the lower limbs. The calvarium was thin, but in other respects normal, and on its being removed an unusually large quantity of blood escaped from the sinuses. The Pacchionian bodies were better marked than usual; dura mater healthy; extensive effusion of serum into arachnoid sac and subarachnoid spaces. The surface of the brain was healthy, but rather anæmic; the convolutions were well marked; the ventricles were filled with serum, in which, on careful examination by Dr. Bell, urea was found in appreciable but small quantity. The corpora striata and optic thalami were rather firmer than is usually the case. There seemed to be hardening and thickening along the line of the *tænia semicircularis*. The cerebellum was normal. The medulla oblongata and spinal cord seemed healthy, but the anterior columns, in the upper half of the cord and medulla, presented a firmer feeling than normal.

The various parts of the nervous centres have been carefully examined

by Dr. M'Donnell, without discovering anything abnormal.* The lungs were found extensively diseased, being filled with large masses of firm cheesy deposit, and in some places contained extensive nodules, showing long-standing pulmonary disease. There were extensive pleural adhesions, so that the lungs were with difficulty removed from the thoracic cavity.

There was considerable pericardial effusion, the effused fluid containing urea, as in the case of the lateral ventricles of the brain. The heart was extremely small and pale.

The stomach and intestines were small, contracted, and their coats thin; there were no enlarged mesenteric glands; the liver and spleen were healthy; the kidneys were much enlarged, and in a complete state of amyloid degeneration; the bladder was thickened and contracted, and contained a small amount of slightly albuminous urine.

From the foregoing description of this remarkable case, it is evident that the symptoms presented resembled closely those of true catalepsy, if to any disease such a definite term is applicable. The case is not unique, as being one where cataleptic conditions followed upon debilitating causes. The irregular life led by the patient must have kept him in a permanent state of ill health, and the chronic renal and pulmonary affections alone were sufficient to produce a state of debility equivalent to those accompanying the cases mentioned by M. Lagègue in connexion with marasmus and pulmonary phthisis.

The case presents the peculiarity of a nearly complete absence of the paroxysmal character usually met with in catalepsy. The cataleptic state in this case was almost continuous for ten months. The short and infrequent remissions of the cataleptic state may of course be considered as corresponding with the usual but longer periods of sensibility met with in recorded cases.

In conclusion, I have to return my best thanks to Mr. Moorhead for his kindness in collecting the scattered history of the case; to Dr. Bookey and Dr. Tweedy for their assistance in making the difficult *post-mortem* examination; and to Dr. M'Donnell for his careful and minute examination of the specimens of the nervous centres.

* The portions examined by Dr. M'Donnell were from sections made through the following parts:—

1. Medulla oblongata, exactly below the transverse fibres of the pons.
2. Medulla oblongata, through the middle of the olivary body.
3. Medulla oblongata, at the side of the calamus scriptorius.
4. Through the cervical enlargement of the cord (at the middle).
5. Through the dorsal portion of the cord.
6. Through the lumbar enlargement; also
7. Section of the pons Varolii.
8. Section of the optil thalamus.

He examined the structure at each of these points, but could find no structural changes. The blood-vessels also seemed normal.

DR. STEWART mentioned the case of a lady who had been in a condition similar to that described by Dr. Grimshaw. She never ate anything except at breakfast time, when she took an egg and a little milk beaten up. She was worn almost to a skeleton. On one occasion, when he wished to feel her pulse, she displayed remarkable muscular power, and after exerting all the strength he possessed, he could not displace her arms. She was sometimes eight or nine days without being at stool. She seemed to comprehend all that was going on around her.

DR. EUSTACE thought the Society ought to thank Dr. Grimshaw very much for the most interesting case that he had described. The symptoms of catalepsy he (Dr. Eustace) thought very often accompanied cases of acute dementia in a slight degree. He remembered, some years ago, meeting a case of this kind in which many of the symptoms were the same as those detailed by Dr. Grimshaw. It was that of a gentleman who had such profound collapse of the mind, as it might be called, or acute dementia, that food might be placed in the mouth, at the back of the throat, and he would not swallow it, but, after remaining there for a long time, it would gradually slip down. On his hand being raised to his shoulder, it would remain in that position for nearly an hour before it gradually descended. A remarkable feature in this case was that music was introduced while the food was placed before the patient, and, under the stimulating influences of the music, he would take up a knife and fork, and would cut up and eat the food. If, however, the music ceased, he would stop eating, and would not resume until the music was continued. His recovery took place in about six months after the commencement of the derangement, and his convalescence was greatly helped by music. Dr. Eustace believed that occurred about eighteen years ago, and the gentleman had remained well ever since.

DR. HENRY KENNEDY thought they were still in the dark as to the cause of the remarkable state known as *catalepsy*. He believed the evidence as to pathological changes in Dr. Grimshaw's case, as furnished by Dr. M'Donnell, was of a negative character. He (Dr. Kennedy) had seen cases of fever in which the cataleptic state, or something very closely resembling it, was quite visible. As a general rule, the arm of a fever patient, when lifted, would drop to the side as if it were lead, but he had seen some cases where the arm did not drop, but would remain elevated, and it would only gradually come down by its own gravity. He thought they were very much in the dark as to the cause of this state. In the remarkable case, so exceedingly well given by Dr. Grimshaw, he (the speaker) took it that the greatest amount of disease was, probably, about the chest; that, during the time that the patient was described as a "tramp," his mind was in its most active state; that the disease of the chest

gradually became latent, as frequently occurred, and that then the disease of the brain, as shown by the large amount of effusion in the ventricles and membranes became developed. It was a state they were all familiar with—it threw the chest symptoms into the shade, but did not become less developed itself. On the contrary, it became more and more developed, and would account for some of the symptoms which the patient exhibited. He had seen three or four cases of catalepsy. They were all in females, and connected, more or less, with a hysterical tendency, which they knew was very strong in females, who certainly exhibited cataleptic symptoms very frequently. In reference to fever, he had seen catalepsy sometimes in men. He thought the fact mentioned by Dr. Eustace was a very useful one indeed—the fact that people could recover after being in this condition for six months by the agency of music. The cases were of great practical importance, because they did not know when they might meet them again.

The CHAIRMAN said that the remarkable features of the case appeared to be mostly connected with the renal disease—or, rather, the combination of renal disease, and the symptoms of brain-pressure consequent thereon. The great question to determine was the probable amount and the direction of the pressure that was the cause of the catalepsy, because he supposed in that way there must be some cause. The most striking case of catalepsy he ever saw was very well marked, and continued for a long time. It proved a good example of cancer of the brain, which was exhibited at the Pathological Society by the late Professor Smith. The particulars of that case were very fully detailed. He had not often witnessed a case of well-marked catalepsy in which there was not some proof afterwards of direct pressure on the brain.

DR. ROBERT M'DONNELL said he had examined the parts exhibited by Dr. Grimshaw with an entirely negative result. The portions of the cord and brain were placed in hydrocele fluid—now always used by him for preparations—to which some bichromate of potash had been added. It was a fluid that neither contracted nor enlarged the preparations placed therein, and was not a hardening fluid; but the substance of the cord and brain was abnormally firm, although the sections exhibited had not been exposed to any hardening process.

DR. JAMES LITTLE read a Paper on the *Treatment of Scarlatina*. [It will be found at p. 279.]

DR. FOOT read a Paper entitled *Notes on Scarlatina*. [It will be found at p. 284.]

Pressure on our space obliges us to hold over the discussion on these two Papers.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-SEVENTH ANNUAL SESSION.

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LOMBE ATTHILL, M.D., President, in the Chair.

A Case of Extra-uterine Gestation. By JOHN DENHAM, M.D.

MR. PRESIDENT AND GENTLEMEN,—The rarity of this untoward and too-often fatal disease, or accident, as we may please to call it, must plead my apology for going a little into the history, the treatment, and results of such cases.

Riotanus, so far as we know, was the first writer who, in 1650, reported a case of extra-uterine gestation. Polinus, however, gives the history of a case, although not recognised as such at the time, as early as the year 1581, which was spontaneously relieved by an abscess in the left hypochondrium. He relates that a woman who had had ten children, conceived again, and at the full period was delivered through an abscess in the left hypochondrium, whence a well-grown infant was extracted, which survived one year and a half. The mother, however, died on the third day in great agony.

Four varieties of extra-uterine gestation are enumerated—viz., ovarian, Fallopian tube, ventral, and interstitial. The ovarian form must result when the vesicle has been impregnated in its natural situation, without having been detached by the fimbriated extremity of the Fallopian tube from the ovary. In the two first recorded cases of this kind it was found that a foetus of about two months' growth had fallen into the cavity of the abdomen, the ovary in each case having a rupture on its most depending part.

The reason of the frequency of the second variety—namely, the Fallopian tube gestation—is very obvious. When we call to mind the narrowness of the tube, and how susceptible of inflammation all such highly-organised structures are, our wonder will be, not that such cases should occur, but that they do not occur much more frequently.

The third variety, called abdominal or true ventral gestation, takes place when the fecundated ovum, instead of being conducted into the uterus along the Fallopian tube, drops into the cavity of the abdomen and is there developed. In this case the placenta becomes attached to

the intestines, to the mesentery, to the stomach, or any part covered with peritoneum; while the uterus, the ovaries, and the Fallopian tubes may be, and generally are, in a natural and healthy condition. In one of the cases recorded it is stated that the child lay with its head downwards close to the lumbar vertebræ, the feet being situated under the stomach and colon, while the rest of the body was covered with omentum; the cord was round the neck of the fœtus, which was well formed and at its full period of gestation. The placenta was adhering to the lower part of the stomach, to a portion of the colon, and to the gastro-epiploic vessels. The external surface of the uterus and its internal were quite whole, as were also the ovaries and the Fallopian tubes.

The fourth variety, termed interstitial, of rare occurrence, is that form of uterine gestation where the impregnated ovum has made its way along the canal of the Fallopian tube into the muscular coat of the uterus. It does not lie under the peritoneal coat of the uterus, or between the muscular coat and the lining membrane, but between the layers of the muscular fibres. Of seven cases of this kind recorded by M. Brischat, five occurred on the left side.

Another variety mentioned is that of uncertain locality, but from a journal of the published records of cases given under this class, it appears to me probable that many, if not all, of them may be considered as fairly belonging to some of the other varieties, and not worthy of a separate classification. To any who may wish still further to investigate this important and interesting subject, I would beg to refer them, among other works, to the first edition of Davis's "*Obstetric Medicine*," where he has collected and given the history of about 90 cases, which he arranges in the following order:—Ovarian, 16 in number, all of them terminated fatally, and most of them at an early period after conception. Fallopian tube pregnancies, 40 in number, most of them fatal in the early months of gestation, but some survived; one lived 3 years, one 6, one 8, one 14, and one 17 years. All the cases of ventral gestation recorded—8 or 9 in number—have, without a single exception, terminated fatally within the period of natural gestation, and the greater number during the earlier weeks.

Among the cases recorded in Davis's fourth and last division of extra-uterine conceptions—namely, those of uncertain locality, 24 in number—there are many cases of recovery, and many of deep interest. Permit me to mention a few of them:—1st. A case of recovery after 9 years' gestation, by the escape of the fœtus through an abscess which opened near the umbilicus. 2nd. Recovery after a twin extra-uterine conception, and the enjoyment of health for 7 years subsequent to the cessation of life in the child. One case where the woman survived 27 years after an extra-uterine conception, one 28 years, and one 43 years. Again, he records a case of 2 extra-uterine gestations in the same

woman conceived at different times or dates. Also a case of natural uterine gestation which supervened on an extra-uterine conception; and lastly, a case of recovery where the bones of the foetus were removed from the rectum by means of a lithotomy forceps. I had a similar case when master of the hospital. Our Dublin hospital reports, on the subject under consideration, are very meagre, but I cannot resist alluding to a case of deep interest, from the pen of a master mind, so graphically described that the author is photographed in the picture he himself draws. The late Professor Montgomery, in his very valuable work on the "Signs and Symptoms of Pregnancy," speaking on this subject, says:—"The writer had once an opportunity of examining a very remarkable case, which presented a combination that could hardly fail to be attended with infinite doubt. A woman was received into Cork-street Fever Hospital in 1828, with considerable enlargement of the abdomen. Her history, as far as it could be learned, was that, 8 years before, she had been in labour, which, after continuing for two days, suddenly ceased, and the child, as she expressed herself, rose up into her stomach. No delivery followed. After remaining in bad health for about two years, she again experienced the symptoms of pregnancy, and gave birth to a child that did not survive: but the former child still remained in the cavity of the belly, and during its continuance there she bore three children, the last of whom lived. Ultimately a fistulous opening formed near the umbilicus, which was enlarged, and the original child removed. It was in a state of wonderful preservation, measured 22 inches in length, and had attached to it about two feet of the umbilical cord." Dr. Montgomery adds:—"A case of a somewhat similar kind has been recorded by Dr. Steigertahl, in which the woman lived in good health to the age of ninety-four, with a full-grown foetus in the abdominal cavity for the last 46 years of her life, during which she bore two other children."

And now, Mr. President and gentlemen, I shall give to you, as briefly as possible, the history and termination of, I believe, the first—and I sincerely hope it may be the last—case of extra-uterine gestation that it has been my lot to attend. On Sunday, 2nd of last August, I was called to visit a lady in Rathmines, at or about 12 o'clock in the day. I found her pallid and nearly pulseless, with incessant vomiting, and complaining of great pain over the abdomen. I learned from my friend, Dr. Mitchell, who had been in close attendance since 5 o'clock in the morning, that she had been suddenly attacked with severe pain in the abdomen. About 11 o'clock on the previous night, having walked home in perfect health, after spending the evening with some friends in the neighbourhood, she described the pain as if she had been stabbed with a knife, while at the same time a feeling of weakness and sinking suddenly came on. He found her suffering severe pain, which she referred to as rather below the region of the stomach, with nausea and

occasional vomiting. Her pulse did not indicate much prostration. He looked upon the case as one of great gastric irritation, and gave her at once 20 minims of Battley's sedative, with 2 or 3 drops of hydrocyanic acid in a draught, and left her a mixture with small doses of Battley and hydrocyanic acid, to be taken every two hours, gave small quantities of brandy and soda-water, and directed hot epithems for the abdomen. He remained a couple of hours, and she appeared relieved, when he left. He said he would return at 10 o'clock, but a messenger came at 9, saying she was no better.

He found her a little weaker, and the stomach still sick; ordered her iced champagne, and to continue the medicines.

Dr. Nicholas White, the coroner, came in, as a friend, to see her, and was of opinion that nothing better could be done for her, and to pursue the treatment for some time longer; but while he and Dr. Mitchell were consulting in the next room, they were called in to see her, and found her in such an extreme state of prostration, bordering on collapse, that they at once took alarm, and suggested that immediate assistance should be sent for. I came about 12 o'clock, but in the interim she had rallied.

There is little to add, so far as treatment is concerned. I recommended that she should take a mixture with bi-carb. soda and prussic acid, alternately with a pill containing watery ext. of opium and calomel, the iced champagne to be continued, with iced chicken-jelly, and beef-tea injections to be given, with wine or brandy in them. I saw her again in the middle of the day with Dr. Mitchell, and again at night, when she appeared to have rallied, to be in less pain, and to have longer intervals between the fits of vomiting. At an early morning visit on the following day, we found that the pain, the collapse, and vomiting, had all returned, and, in fact, that she was rapidly sinking. She died at or about 11 o'clock. We gave it as our opinion to the family that some ulcerated point in the stomach or breast had given way, and that effusion of the contents had taken place into the cavity of the abdomen, causing collapse and probably acute inflammation.

Our opinion and view of the case were confirmed by Dr. Banks, who had been sent for both on Sunday and early on Monday morning again, but unfortunately could not attend in time to see the patient alive. He arrived at the house immediately after death, and on hearing the symptoms, gave it as his opinion that perforation and effusion had taken place. My friend, Dr. Egan, kindly consented to assist me in making the *post-mortem* examination on the following day, but at the hour appointed I was unfortunately engaged with a midwifery case, and all the trouble of the autopsy fell on Dr. Egan and Dr. Nicholas White, who had been unremitting in his attention, both as a friend and a physician, during the entire illness. Before reading Dr. Egan's very admirable report of the *post-mortem* examination, I may mention that I

ascertained that our patient had been married for several years; that she had been for some time in India; that she had given birth to a fine healthy boy, five years before, after which she fell into bad health, and had had several miscarriages, the last a twin case, which had occurred about five months ago; and that she considered herself to be, at the time of her death, about two months pregnant.

"August 3rd, 1874.—This day, as requested by Dr. Denham, I made a *post-mortem* examination of Mrs S. C., aged thirty-five years, 48 hours after death. The body was that of a beautifully-formed woman, well nourished, moderately covered with subcutaneous fat, and of marble whiteness. There were not any external marks, save those the result of medical treatment; the face pallid and composed; the pupils contracted; a brownish fluid was issuing from the mouth and nose; the abdomen greatly distended.

"The thoracic viscera were perfectly healthy. On opening the abdomen, a rush of air and bloody serum followed the knife. It contained nearly a gallon of bloody serum and coagulum—the latter entirely filling the true pelvis and beyond; the liver and stomach were quite healthy—the latter greatly inflated; in fine, the whole contents of the cavity were exceptionally sound; the blood-vessels were unbroken. On removing the coagulum before described from its position, the source of hæmorrhage was found to have been a ruptured 'tumour,' situated within the folds of the left broad ligament of the uterus (which was itself somewhat enlarged) in the track of the Fallopian tube, about two inches and a half from its uterine attachment. It was ovoid in shape, two inches and a quarter in its longest axis, which ran parallel to the tube by one inch and a fourth in its shorter transverse. It was irregularly lobulated on the surface, purple-brown in colour, and quite firm to the finger. It was embedded in coagula, and had evidently burst at its distal end, tearing through peritoneal and other investments.

"The head was not examined. The pelvic viscera were removed for further examination."

And now, what are the lessons to be learned from such a case as this? I fear they are few, and not of much practical value. It certainly points to the importance of close and careful diagnosis, and also to a guarded prognosis, for the lull in all the urgent symptoms at my evening visit tempted me to hold out a stronger hope of recovery than the result warranted.

Let us for a moment suppose that the real nature of the case had been diagnosed at the moment of the rupture, could anything more have been done? In my opinion, nothing. Let us go back a little and suppose that we had been able to diagnose the nature of the case before the rupture had taken place, could we have done anything to prevent the final and fatal issue? I believe nothing. Again, let us suppose that

the case goes on to, or near to, the full period of gestation, and that the child is alive, would we be justified in having recourse to the Cæsarean section in the hope of saving the life of either mother or child, or both? On this point I reserve my opinion until called on to reply.

DR. M'CLINTOCK said, in connexion with the subject of extra-uterine gestation, there were a great many questions of primary importance which would admit of debate in a society such as that was. The most important question, perhaps, was that of diagnosis. Were a case of this kind diagnosed before any untoward symptoms presented themselves, or before the rupture of the cyst, he inclined to think that means might be successfully adopted to avert the almost inevitable catastrophe. Now the question, in the first instance, might be raised on the case brought forward—was it actually a case of extra-uterine gestation or not, inasmuch as the most conclusive proof of pregnancy was wanting—namely, the production of the embryo? On the evidence before them, he had no hesitation in expressing his own conviction that it was a case of tubal gestation, and he thought that, with the exception of the absence of the embryo—which could be very easily accounted for—they had every symptom necessary to justify such a diagnosis. The woman was, doubtless, six or eight weeks pregnant; and in nearly all the cases that had been recorded of tubal gestation, the rupture of the cyst had taken place about this period. The mode of death, and the circumstances attending it, were such as almost invariably occur in these cases, but, besides this, the uterus was enlarged, and lined by decidua—a state of things which almost always existed in cases of extra-uterine gestation, especially of the tubal and ovarian variety. Its occurrence in the left tube was in accordance, he believed, with what had generally been observed.

The PRESIDENT remarked that it was a very remarkable fact that, according to the statistics of Dr. Denham, the mortality of the abdominal gestation was greater than that of intra-mural or Fallopian. That was contrary to what might be expected, because if the foetus fall into the abdominal cavity it might live a long time, and increase in size greatly, without causing death. Dr. Denham had stated that there was a large percentage of cases in which the locality was not defined. It struck him (the President) that possibly a considerable number of these cases survived; and probably where the locality was not defined, they were instances of abdominal gestation. Some of the members would remember the case of a lady, in Dublin, who, twenty-five years ago, was the subject of extra-uterine gestation. In her case the bones of the foetus were afterwards removed from the vagina. That lady was still alive and well, and it would be impossible, even if she were now to die, to

decide what may have been the seat of the development of the fœtus; but he thought it was more likely to be in the abdomen than in the Fallopian tube.

DR. CHURCHILL said that, with reference to the case of the lady to which the President had alluded, and which had originally been diagnosed by Dr. Evory Kennedy, when she was believed to be three months pregnant, she was suddenly attacked by great pain. A tumour could be felt a little above the pubis. At the time it was disputed whether it was a fibroid tumour or extra-uterine pregnancy, and Dr. Evory Kennedy got less credit than he deserved. Matters remained in *statu quo* for eighteen years, when he (Dr. Churchill) was called one day to see the lady for some uterine discharge, and on making an examination with the finger, he found the orifice just behind the cervix in the body of the uterus, and a piece of bone filling a little orifice somewhat larger than a quill; and, bearing in mind the previous circumstances, he thought it might be some bones; and, having enlarged the opening, Dr. Butcher and he took out a number of bones—those of a fœtus of three months. The lady has been in perfect health ever since. The bones were embedded in the substance of the wall of the uterus.

The PRESIDENT said he did not see why the case could not be explained as a process of ulceration opening through the walls of the uterus. He thought that would be a simple explanation, that bones had made their way down through the substance of the muscular tissues.

DR. KIDD said it seemed to him that the great importance of these cases was in a diagnostic point of view, or rather perhaps, he should say, the important question they had to consider, was the diagnosis of these cases; for, unfortunately, the case described by Dr. Denham—like most of the others on record—did not throw any light on the diagnosis, because it was not seen until the rupture had actually taken place. That was the great difficulty in cases of Fallopian or ovarian gestation—that rupture occurred at periods, when the general symptoms of pregnancy were not sufficiently developed to enable them to form a very decided and positive opinion as to whether pregnancy was present or not, and then the first thing that attracted attention was the rupture of the cyst, which was attended by a fatal result. If the diagnosis could be established, he believed, with Dr. M'Clintock, that it would be well worth while to try some of the methods that had been proposed for checking the growth of the tumour; in other words, to destroy the life of the embryo; but until they established the diagnosis, he did not see how that was to be attempted. In cases of ventral gestation, diagnosis was more easily established. In cases of that kind, the tumour grew to a larger size as a

rule. In a case that came under his observation, he succeeded in diagnosing the true nature of the case, though it may have been perhaps by chance that he did so. He was asked to see a lady living in the suburbs of Dublin, who was, at all events, up to about the seventh month of pregnancy. All through her pregnancy she suffered a great deal from sickness. The abdomen was of unusually large size, and there was a great degree of irritative fever. On examination, he found it very tympanitic, and he could make out a tumour which he believed to be the uterus enlarged. The breasts presented the signs of pregnancy, there was a placental murmur to be heard, and with the exception of the foetal heart, all the usual symptoms of pregnancy were found. She was exhausted to an extreme degree by sickness and irritative fever—so much so, that after various methods of relieving the sickness had been tried, it was resolved to empty the uterus, and in order to do this, he passed a sound to rupture the membranes. On doing so, he found, however, that the uterus was not large in proportion to the period of pregnancy, and that he could not pass the sound in more than about four inches. Labour not going on, and the woman obtaining no relief, the mouth of the uterus was dilated so far as to enable him to get his finger into the cavity. He then satisfied himself that the uterus was empty, and on making further examination he was able to trace distinctly the outlines of the foetus lying outside the uterus in Douglas's space. With one finger in the uterus, and one in the rectum, he was able to trace it distinctly. He proposed to cut down on the tumour to remove it. He was, however, overruled in that suggestion at a further consultation; and within a few weeks the lady died. He got an opportunity of making a *post-mortem* examination, and he exhibited the specimen at the Pathological Society. In that case they found the foetus far advanced in decomposition, lying in the cavity of the peritoneum in a cyst formed there between the uterus and the broad ligament in front, and the rectum and the wall of the pelvis behind, the parts being matted together by adhesions. The result of the *post-mortem* examination made him regret still more that he did not cut down upon it. He exhibited to this Society, a few years ago, a specimen of Fallopian gestation which resembled the case of Dr. Denham. In the same way it was not diagnosed. The patient was a servant woman, who was admitted to the Whitworth Hospital with all the symptoms of rupture, but in what part was not known. She was in a state of extreme collapse, and died in that condition. The *post-mortem* examination showed the case to be one of extra-uterine foetation, and Dr. Banks was good enough to give him the specimen. The embryo was perfect. The specimen is now in the museum of the College of Surgeons.

DR. JOHN A. BYRNE said the history of the case before the Society very closely resembled that of all the other cases which had been brought

before them. He remembered very well Dr. Kidd's case, in which the fœtus was found. Dr. Tufnell had also exhibited another case in which tubal rupture had occurred at three months of gestation in the wife of a soldier. In this case the small fœtus was found in the tube. The last case which he had seen occurred also in the practice of a medical military friend, Dr. Sly, of the Royal Artillery. The patient was the wife of a soldier, and died very quickly after the rupture occurred. On examination after death the tube was found ruptured, and extensive extravasation of blood into the peritoneum, but no fœtus. He (Dr. Byrne) had exhibited the case to the Society for his friend, Dr. Sly. Now all those cases were very much alike one to the other. He had never himself seen a case whilst the patient was living, nor assisted at the autopsy of one of those cases. With regard to the case before the meeting, it was a remarkable fact that the patient lived so long after the occurrence—viz., thirty-six hours. In most of the cases death took place very soon after the rupture. In fact it generally is caused by the great amount of hæmorrhage which takes place, and by the extreme collapse which ensues. The fact of a well-developed decidual membrane being formed in utero, in this case, was nothing unusual, as it was a matter of notoriety that, although conception did not occur in utero, yet Nature took on the proper steps to prepare for the reception of the ovum and its subsequent development. Now, unfortunately, these cases were not generally seen until the occurrence of the rupture, and then all the symptoms of sudden collapse were manifested. In this case he thought that the long period during which the woman lived might have caused something like an approximate diagnosis to have been made, as she did not die for thirty-six hours, and survived the effect of the hæmorrhage and collapse, and he thought it not an unreasonable thing to hope for recovery under similar conditions; therefore he thought that they should endeavour, by every possible means, to arrive at a correct diagnosis in such cases. He thought that the symptoms were so remarkable in Dr. Denham's case as to have led to a diagnosis of tubal rupture. In cases of rupture of the stomach or bladder, the symptoms were so decided and so well marked that an experienced man would have no difficulty in arriving at a correct conclusion. No doubt in all such cases of rupture of any internal viscus, they had the same general symptoms—viz., collapse and extreme prostration, but in cases of rupture of the uterus or tube, the pain was generally referred to the seat of injury; thus, for instance, in rupture of the stomach, pain is referred to the epigastrium; in rupture of the tube or bladder, it is referred to the lower part of the abdomen.

The fact of a patient having recovered from the shock of such a terrible accident as this, was an indication to us that such cases were not utterly hopeless, and that it was possible such cases might recover.

Some years since he had brought a case of rupture of the uterus before

the Society, in which he removed the child from the abdominal cavity of the mother into which it had escaped ; the woman recovered, and is still living. In this case he exhibited large and repeated doses of opium, and strictly prohibited the administration of a single grain of mercury. A case such as this is highly illustrative of the powers of Nature to induce recovery, and he was quite certain that had he given mercury, and not trusted to opium, the result would have been different. In idiopathic peritonitis, no doubt mercury may be useful, but in peritonitis, which ensues as a reparative effort to cure a vital lesion to an important organ, in his opinion it was a dangerous remedy. In such cases as the present, he would not be in favour of warm fomentations to the abdomen, as additional hæmorrhage might be thereby superinduced.

On Protracted Labour, Hour-glass Contraction, Hæmorrhage, and the Introduction of the hand into the Uterus. By S. NICOLLS, M.D., Medical Officer to the Longford Workhouse Medical Hospitals.

HAVING seen in *The Dublin Journal of Medical Science*, for May, 1874, a discussion on the relative merits of the solution or the solid perchloride of iron, in which the introduction of the hand into the uterus incidentally occurs, and an invitation to practitioners is given to state the result of their experience, I am induced to give the result of my long experience regarding the introduction of the hand into the uterus, and also what led to my adoption generally of that proceeding. For some six or seven years after I got my appointment here and engaged in midwifery practice through the country, I was frequently much embarrassed and severely taxed as to time and bodily fatigue, by a complication in labour, which is frequently met with in the country, owing to the very laborious lives led by the wives of small landholders and labouring men, such as carrying on their back, in creels, turf from the bog, manure from their cabins to the fields, and stones from the fields to be broken for road-making. With those heavy burdens they are obliged to stoop forward, which causes the abdomen and uterus to be more prominent and pendulous than they should be naturally. The complication I allude to is a partial suspension of labour, so that the natural expulsive force is interfered with, and for some two, three, or four days, the woman is worn out with sickening, torturing, unavailing labour. I have frequently been kept two or three days waiting most anxiously for the descent of the uterus and the expansion of the os, so that I could use the forceps, and end the patient's suffering and my own anxiety and fatigue. I observed that the liquor amnii gradually escaped, and the uterus became narrowed and lengthened, so as to assume a long oval shape, instead of the compact globular form it should have. I also found that this kind of cases was followed by hour-glass contraction, which added much to the

poor woman's torture and suffering. On very many occasions, my hands have been for days nearly powerless, from the long and severe pressure they were subjected to in overcoming hour-glass contraction. Many and many a time, when driving home at night, have I anxiously thought and reflected on the cause of this complication, until, after seven years' meditation, I fortunately hit it off, and for the last twenty-five years I have had comparatively mental and bodily comfort. The result of my reflections was that I became satisfied that the suspension of labour was caused by the head of the child pressing the cervix-uteri on the arch of the pubis; thus the descent of the uterus and the expansion of the os were completely arrested. After a time, the waters commenced to escape, and the uterus, not being able to contract from the fundus downwards, contracted circularly on the fœtus, until the legs became extended and the uterus moulded itself on the body of the child as completely as the shell of a walnut on the kernel. This I am satisfied of; for, on innumerable occasions after extracting the head, I had equal difficulty in getting down the shoulders, and the same in extracting the hips. Then the placenta was retained by hour-glass contraction. Now matters are entirely changed, and I get along generally with expedition, comparative ease to myself, and safety to my patients. In the last twenty-five years, my practice has been first to ascertain if the uterus retains its natural globular form; if so, I wait quietly and let nature take its course; but should I find that the uterus had become elongated, and that the pains are sickening and unavailing, I give an opiate draught, and commence to dilate. I am very soon able to apply the long forceps, and comparatively with little trouble I can extract the child, previous to which I give a full dose of ergot, to ensure a good contraction. Then, as soon as the funis is secured and divided, I introduce the hand promptly and remove the placenta, whilst the vagina and uterus are open and yielding. The ergot insures the contraction of the uterus, so that as I withdraw the hand and placenta the uterine contraction is immediate. I then apply the binder, make the woman comfortable, see that there is no loss of blood, and my trouble is over. They generally complain of after-pains, but this is a sure sign there is no relaxation, and, therefore, no hæmorrhage. I advise that the patient be kept very low, and no oil or other purgative given. I have observed that women who get food and purgatives are liable to have the milk and other secretions interrupted, and sore breasts and even puerperal peritonitis follow. Now, as to the introduction of the hand, twenty-five years' experience has satisfied me that, as the President, Dr. Evory Kennedy, stated during the discussion, it is as harmless as the head or breech of the child. It is not the hand, but the vast amount of violent injury inflicted in forcing the hand through the contracted vagina and uterus, which excites inflammation and causes that most fatal disease, puerperal peritonitis. I am so satisfied with the

advantage of promptly introducing the hand and removing the placenta, that I invariably resort to it with my most respectable patients. I could give many sad cases, to which I have been called, arising from waiting two hours for the placenta to be expelled.

In answer to several questions put to him—

DR. NICOLLS said that after he got his fingers into the os uteri he then slipped one of the blades of his forceps in between them. In like manner he introduced the second blade. He believed he had been using the long forceps for twenty years, and had frequently used them when the os was only about the size of half-a-crown. He impressed upon his patients the necessity of low living.

DR. DARBY thought the Society was indebted to Dr. Nicolls for his paper, although in several material points he (Dr. Darby) did not agree with the treatment advocated in the paper. He did not approve of parturient women being kept low after delivery, as he had seen bad consequences follow such treatment; and he felt constrained to say he did not approve of the application of the forceps before the os uteri was well dilated; he was present in that room when Dr. Johnston brought the practice in question under the notice of that Society, and it so happened that within a week afterwards he was called by a neighbouring practitioner to see a woman whose labour had set in, by the rupture of the membranes and discharge of the waters, twenty-six or twenty-seven hours previously; he found the os only dilated to the size of a shilling, and as the woman was cool, and her pulse quiet, he recommended the doctor in attendance to give her a sedative, and wait a few hours. In twelve hours afterwards he was again sent for, and found the woman much exhausted, hot, and excited, with her pulse up to 120; the os was at this time about the size of a half-crown piece, situated high up and towards the sacrum; the anterior lip and cervix so thin that he could not feel sure that his finger was not on the child's head, until he passed his finger under it; then having his finger on the head, with the thin expansion of the womb resting on the back of his finger, he endeavoured to slip the blade of the forceps under his finger upon the head, but the resiliency of the os was such that he failed seven or eight times, and it was not until he hooked his finger on the lip of the womb, and drew the os downwards and forwards, that he was enabled to pass the blade with safety on the child's head. This was, perhaps, the most difficult operation he had ever performed, and it satisfied him that it was one which ought not to be attempted except under the pressure of urgent necessity. Dr. Nicoll's description of a pendulous condition of the abdomen in the advanced stage of pregnancy, common among Longford women, necessitating the early use of the forceps, recalled to his (Dr. Darby's) mind the case of a

woman he had attended about two years ago. She was the mother of three children, and was in the seventh month of her fourth pregnancy; when he first saw her her abdomen literally hung down in front of her thighs, and was so thin that he ordered her to wear a suspensory bandage, supported from the shoulders; he afterwards attended this woman in her confinement, and she had an easy short labour. After the child was born, when he placed his hand upon the abdomen, to secure contraction of the uterus, he was almost alarmed at what appeared to him to be the total absence of muscular tissue in the front wall of the abdomen; it felt as if nothing but the skin interposed between his hand and the uterus. The belly, like an empty bag, collapsed into loose folds; it appeared to him as though the recti muscles were altogether wanting, yet this woman had an easy labour, and made a good recovery.

DR. M'CINTOCK said that he thought each of the members present would form his own opinion upon the practice described by Dr. Nicolls, but he (Dr. M'Cintock) thought that whatever they might think upon that point, it was undeniable that Dr. Nicolls had brought before the Society the most original paper they had heard for a length of time. Dr. Nicolls had shown himself one of the boldest obstetric innovators; for not only was he (Dr. Nicolls) in the habit of dilating the os uteri artificially, but he was very prompt in the use of the long forceps early in the second stage, or rather before it had actually begun. They had heard of such things of late, and they had known that such practices have been introduced by very able and experienced men in modern times, but going beyond such reformers, Dr. Nicolls had told the Society that he is equally prompt in interfering in the third stage. He (Dr. Nicolls) did not wait for the placenta to be expelled, nor give time for the uterus to contract, but put in his hand and withdrew the placenta immediately after the child was born. Thus he had shown himself to be in advance of the most advanced obstetric innovators! There was one thing with regard to the paper that had to be regretted, which was, that Dr. Nicolls did not favour the Society with any statistical account of the results of his extraordinary practice.

The PRESIDENT said that Dr. Nicolls was the first Irish practitioner that ever used the long forceps, because twenty-five years ago it was not in use in Dublin. There was one point in reference to the observations Dr. Darby had made on the subject of the use of the forceps before the os was fully dilated. As this practice raised a serious question, he (the President) would like to mention a case that came under his own notice. Some years ago he was asked to assist one of our most experienced midwifery practitioners in Dublin in a case in which he deemed it necessary to use the forceps. The os was two-thirds dilated. The

gentleman who had charge of the case applied the forceps, but, on using traction, the head not coming down, he asked him (Dr. Atthill) to examine the patient, and he found that the blade of the forceps had been forced through the lip of the os, which was very thin and was spread over the head. He believed Dr. Darby's case was very like this, and that the patient recovered; still it was not a trifling matter that the cervix should have been lacerated as it was in this case. He (the President) mentioned it as a warning to young practitioners that they should not rashly apply the forceps before the os was dilated; but he did not mean to say that there were not many cases where it might be applied before the os was dilated.

DR. KIDD said he would be sorry to say anything depreciatory of the paper that had been read, or anything that could possibly offend or hurt the feelings of Dr. Nicolls, but he (Dr. Kidd) would be still more sorry that it should go before the world that the practice inculcated in this paper was laid before the Dublin Obstetrical Society, and that none rose to protest against it. They had heard of Dr. Nicolls being an innovator. He (Dr. Kidd) thought he was a very bold innovator, and he thought that perhaps—in fact, he (the speaker) was pretty sure that it was so—that his words had conveyed to the Society—at least to him personally—a stronger impression of his innovations than his practice would do, had he (Dr. Kidd) an opportunity of witnessing it. He meant to say that he believed it was very likely—and he should hope that it was positively so—that Dr. Nicolls' practice was not so bold as it appeared from his description of it. Dr. Nicolls said that they were to force the os to dilate in the first stage of labour. He (Dr. Kidd) must say that he thought it a dangerous practice, and one that, if adopted by less experienced hands than those of Dr. Nicolls, would be sure to be followed by most injurious results. He (Dr. Kidd) thought, too, that the introduction of the forceps before the os was fully dilated, was also a practice which, in the hands of Dr. Nicolls, Dr. Johnston, and others, might, perhaps, be done safely and with advantage in exceptional cases, yet if it were to go forward as a recommendation of senior practitioners to the junior members of their profession, he feared it would be followed by the worst results—results similar to those in the case that had been detailed by the President. Then, as to introducing the hand into the uterus to remove the placenta, he (Dr. Kidd) confessed he looked upon it as a most dangerous operation, and justifiable only in extreme cases. He believed that the introduction of the hand into the uterus to take away the placenta was the most dangerous operation in midwifery. To use the forceps was by no means so dangerous; craniotomy he did not think so dangerous; version was not so dangerous, because in that case they had the uterus protected by the membranes, and there were no open-

mouthed vessels exposed. When they introduced the hand for the purpose of removing the placenta, they brought it in contact with the uterine surface stripped of its lining membrane, and they had often to use force in detaching the adherent placenta. He, therefore, believed it was really a very dangerous operation. He could not even stop there. He did not approve of keeping the patients low. He believed parturition was a natural process, and there was no reason why their patients should be kept low, and he thought it was the experience of the Dublin hospitals that the patients did better when they were fed tolerably well from the time of their confinement. He had said he had thought it necessary to speak in this way in reference to the paper, because the practice was captivating; it saved time; it showed that they were able and willing to do something, and young minds might easily be led away to adopt it; and he, therefore, must protest against it. In speaking of it so he had no desire to annoy Dr. Nicolls.

DR. NICOLLS said he would not like young practitioners to have the idea that he would act, or would encourage them to act, hastily. He was one of the original members of the Society, and he well recollected, when he was a pupil in the Rotunda Hospital, that a woman came there, three or four days in labour, and he then observed that the uterus was elongated. She was a long time in hospital, but was at length delivered. There was hour-glass contraction, and Dr. Campbell found great difficulty in removing the placenta. He (Dr. Nicolls) was at another case, at Cole's-lane, of hour-glass contraction and retained placenta, and owing to the threatening conduct of some butchers, he had to remove the placenta as quickly as possible, and fortunately he succeeded, or serious consequences for himself might have followed. He mentioned those cases to show that such practice was not recent, but was adopted forty years ago. Happily, he had had occasion to resort to version or craniotomy very rarely, and he would not grudge two or three days devoted to a case to avoid either; and it would be only to save a woman's life, and when he was very well satisfied that the child was not alive, that he resorted to these expedients.

The Society then adjourned.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Aneurism of the Thoracic and Abdominal Divisions of the Aorta.—DR. B. G. M'DOWEL said:—I wish to exhibit a specimen of aneurism in the abdomen which was attended with a few unusual symptoms, and ended in a rather unusual way. I shall only allude to the prominent symptoms. The man was, as many of the subjects of this disease are, a soldier. He was only twenty-nine years of age; had had ten years' service in the army, but it may be mentioned, as excluding two of those causes which are so often associated with the name of the soldier, that he never had syphilis, nor had he been of intemperate habits. He appeared to be perfectly sound until two years before his death, for the symptoms of this disease occupied as nearly as possible one year. At the commencement of this year he began to suffer from severe but intermittent pain in the back, for which he was treated in a military hospital. No suspicion arose of this pain being anything but real, for it appeared that on many occasions the man got exemption from much ordinary military duty. He had repeated attacks of this pain in the back relieved by treatment. In the month of May he had a very severe attack, and he described the pain as no longer situated in the back alone, but as coming round his sides, though more on the left than the right, and he marked distinctly in the region of the waist the direction in which the pain ran. These were the only two things of which he complained—pain in the back and pain running in a circle round the waist, but felt more on the left side. He had frequently to go into hospital in consequence of recurrence of the pain, and then it began to extend down the left side of the thigh as far as the knee. During this time the attacks of pain were associated with great sickness of stomach and vomiting. When the pain was at its maximum nothing would lie on the stomach. He lost flesh, and on coming into hospital, which he did towards the end of November, he was a stone lighter than when these pains commenced. He got his discharge from his regiment on the 1st of November. Feeling better, he attempted ordinary labour, and was seized with the most severe attack of pain he had ever had. For this attack he sought admission in the beginning of this month at the Whitworth Hospital. You had only to look at him, and you would single him out in the ward as a man suffering great pain.

His favourite position was on his back, with his knees drawn up. If he extended his limbs, he suffered more pain; but, on handling the abdomen, pressure did not in the least add to his suffering. The pain was of the same character in the back, round the line of the diaphragm, and down the left side into the thigh. He got great relief from opium, and particularly from the hypodermic injection. He had, as is usual in cases of abdominal aneurism, obstinate constipation of the bowels, and that to an extreme degree, and we were therefore obliged to have recourse to the hypodermic mode of treatment. For some weeks his suffering was much modified, and he expressed himself gratefully for the relief afforded him. Suddenly on Wednesday last, at five in the afternoon, he was attacked with a fainting fit, preceded by a very violent attack of pain. My clinical clerk attended to him. He found the man pulseless, speaking with a whispering voice, and complaining of intense pain. He got stimulants, and the hypodermic injection was had recourse to. I saw him next morning. He was then under the influence of opium, the pupils contracted, lying in his favourite position; no pulse at the wrist; and in this state he lived on for about twenty-four hours after the first collapse, when he suddenly died. There was no distinct tumour to be felt in the abdomen. When you looked at the naked belly at a little distance you saw a marked undulation. We thought this undulation in the epigastrium was a little more to the left side than the right, but there was no distinct tumour to be felt; but, on examining with the stethoscope, there was the loudest systolic murmur I ever heard associated with aneurism to the left of the middle line, at the junction of the epigastrium and left hypochondrium. Posteriorly there was a murmur heard between the lower end of the left scapula and the first lumbar vertebra over an area of perhaps the size of the palm of the hand, and exactly at the junction of the left twelfth rib with the vertebra was the maximum intensity of the murmur. At that point the loud blowing murmur was very characteristic. There was no difficulty in diagnosing aneurism from the symptoms. There was, however, one symptom absent—namely, the visceral pains. He had pain in the back, pain round the line of the diaphragm, and pain running down the left side into the thigh. We found, on *post-mortem* examination, an aneurism occupying an unusual position; it was both thoracic and abdominal at the same time. It occupied the lower portion of the thoracic aorta and the commencement of the abdominal aorta—the larger portion of the aneurism lying on the spine above the diaphragm, a smaller below the level of the diaphragm. The vertebral column was, as is usual in these cases, extensively eroded. We have decided erosion of the tenth, eleventh, and twelfth dorsal and the first lumbar vertebrae, so that the aneurism extended over the lower three dorsal and the upper lumbar vertebrae. We see here distinctly the eating out of the bone, the

vertebral substance remaining untouched. The back of the aneurism sprung from the posterior portion of the aorta corresponding to that region; and in two places the posterior portion of the sac was absent, and was represented by the naked bone, with which the blood of the aneurism was in contact. It was evidently circumscribed by the transverse line of the diaphragm, which cut it into two unequal portions, two-thirds below and one-third above the diaphragm. How far the movement of the muscular fibres may have accelerated the rupture of the sac I cannot say, but evidently the sac had not attained much size; it had very little lateral extent, and accidentally we have an illustration of the size of the sac in this coagulum, which is evidently the clot of the original aneurism. This aneurism ruptured on the left side, lifting up the sac from the vertebræ on that side, and made its way into the sheath of the psoas muscle in the first instance, and that was the first period of collapse preceded by pain. We have then a kind of secondary diffuse aneurism lying within the length of the psoas sheath, which was found unusually distended down to Poupart's ligament. The strain put on the sheath of the psoas tested its strength in all directions. This, I suppose, was the condition during which the man lived for twenty hours, and then it gave way at its weakest place—namely, the upper portion. The blood then rushed into the left pleura, and filled the whole cavity of the pleura, which resulted in death—so that we have here a primary circumscribed aneurism lying partly in the chest and partly in the abdomen, circumscribed laterally to a narrow limit. We have, secondly, a diffuse aneurism which occupied the length of the psoas muscle; and, lastly, this diffuse aneurism proceeding upwards and making its way into the pleura, causing death. Psoas abscesses sometimes take the same course. Generally they make their way downwards, but sometimes they go into the pleura. Certainly the weak portion of the psoas muscle is the upper, because it is subject to the least strain. The left psoas muscle here was torn into strips by the rush of blood separating the fibres from one another. This is not a common termination of an abdominal aneurism.—*December 19, 1874.*

Aneurism of the Superior Cerebellar Artery.—*DR. MACSWINEY.*—On last Sunday morning a woman, aged about sixty, was brought to Jervis-street Hospital in a state of complete insensibility. The account which the people who brought her gave respecting her was that she had been in her usual moderately good health that morning; that she was engaged preparing breakfast, when she was suddenly seized with a fit and fell completely insensible. When I saw her her state was as follows:—She was lying on her back, breathing explosively and stentoriously; her face was red; her eyes partially opened; her pupils very much contracted, and her entire state one of complete and general paralysis; universal

loss of power and sensibility. There was no appearance of any special or merely partial paralysis. The mouth was not drawn to one side; neither of the limbs was rigid, nor was there any other indication of local paralysis. She was simply universally and persistently motionless and powerless. There was no water in the bladder. Her pulse was quick, bounding, but not strong. She survived eight hours after the seizure; and Mr. Kane, surgeon to the hospital, made a *post-mortem* examination the next day. The heart was found to be extensively, I might almost say universally, diseased. The left ventricle is notably hypertrophied. The left auriculo-ventricular orifice is contracted, allowing with difficulty two fingers to be passed into it. The mitral valve on both its flaps is the subject of considerable disease; hard fibrous deposits exist on the surface and on the edges of both flaps of the valve. In like manner, on the right side of the heart the valve, at the auriculo-ventricular opening, is considerably thickened, and has its surface studded with deposits of a fibrinous material, which is hard and gristly. So also the aortic valves are the subjects of very extensive morbid alteration. They are contracted, thickened, and incompetent. In fact, the valvular structure of this heart was such as by no possibility could enable its normal functions to be performed with completeness. In the next place, we find that the entire of the inner surface of the ascending aorta is the subject of extensive atheromatous disease. Moreover, the vessel itself is much dilated. Mr. Kane removed the blood-vessels at the base of the brain—those vessels, that is, that go to constitute that remarkable inosculature at the base of the brain known as the circle of Willis. In all these vessels (the carotids, the basilar, the communicating, the cerebrals, &c.) numerous and extensive atheromatous, calcareous, and fatty deposits are to be felt and seen. At one point there is what may be called comparatively a large aneurismal tumour—a true aneurism, in fact, that has given way. This is situated in the superior cerebellar artery; and other small aneurismal dilatations were likewise noticed at different points of this vascular network at the time of the making of the *post-mortem*. Mr. Kane described the appearance of the blood-vessels on the surface of the hemisphere as being congested and enlarged; he found that there was recent lymph effused on the arachnoid; that there was an appreciable but not large quantity of clear fluid in the three ventricles; and that the choroid plexus was markedly blanched and bloodless. But a section into the brain substance at the base reveals the most important lesion, for we thus expose a large effusion of blood in the very rare situation of the “pons;” this has completely broken up, and excavated the substance of the pons. This was the immediate cause of death, and resulted from the rupture and extravasation of the contents of one of the aneurismal dilatations which existed, as shown in several branches of the basilar artery. This blood

effusion into the pons is, in itself, a remarkable pathological specimen, and well worthy of examination. The fact that the blood was poured out into the pons would lead us to expect—as the pons is the very point in the brain where the two motor tracts come together and are united—a complete abolition of all motility, and not any particular paralytic seizure, followed by speedy death; and that was precisely what occurred in this case. The etiology of the occurrence is not quite so easy to determine, in consequence of the absence of the kidneys, which, unfortunately, were not removed, and which are required to complete the precise picture of the morbid states present in this case. We all know, however, as Mr. Bristowe and others have pointed out in their communications to the Pathological Society of London, that a frequent cause of pure apoplexy is rupture of aneurismal dilatations of vessels at the base of the brain; and here we have a good example of one which, giving way, did produce death in that mode. On examination the morbid condition of the heart, of the arteries, and of the capillaries, is very remarkable; and if we assume that the blood was impure, which we may readily do, recognising the fact—now I believe universally admitted—that impure blood can with difficulty be passed through the capillaries, more especially if they be diseased, and that in order to overcome that difficulty the left ventricle becomes hypertrophied, we can easily comprehend how the increased propulsive power of this large ventricle would be capable of rupturing capillaries which, like these exhibited here, were diseased; and as, of all the factors of impure blood with which we are acquainted, a diseased kidney is the most frequent (as we know from the investigations of Drs. George Johnson, Bright, Fothergill, and others), we may be pretty sure there was in this instance a diseased kidney, from which flowed impure blood, and enlarged heart, with ultimately, as we see, cerebral hæmorrhage.—*December 19, 1874.*

Intestinal Impaction, with subsequent Strangulation and Detachment of a portion of the Ileum.—DR. MOORE said: This case is a somewhat remarkable one. It is that of a woman who was admitted into Sir P. Dun's Hospital on the 28th of November last. On the night of the 20th November her husband and she had eaten two quarts of cockles, and at four the following morning she was seized with violent abdominal pain. Dr. Kennedy, who sent the case to Sir Patrick Dun's Hospital, told me that the pain was very severe, and attended with vomiting. The bowels were relieved on two or three occasions by enemata before coming into hospital. On admission she complained of abdominal pain and almost constant vomiting; still she did not lie as one suffering from acute peritonitis; the legs were extended, and there was no tympany—on the contrary, the abdomen was rather flaccid; and from the day she entered the hospital until the day of her death she passed

urine freely. Under the treatment adopted the vomiting was relieved, and for two days there was none whatever; however, on the third day it supervened again, and now she presented symptoms of peritonitis. She got tympanitic, and lay with her knees rather drawn up; still she passed urine in sufficient quantity. The vomiting now was stercoraceous, with a decidedly fæcal smell. All treatment went for nothing, and the woman died on the night of the 5th of December. The *post-mortem* examination was most carefully made by Mr. Barton. There was an agglutination of the peritoneal surfaces in the upper part of the abdomen, but not very close; the parietal could be detached from the visceral layer down to a certain point, but below this the whole mass gave way on the slightest touch; and in the cavity of the pelvis there was found a large pouch containing liquid fæces. On putting the hand into the cavity of the pelvis a detached portion of the intestine was found, a portion of the ileum, which measured nine inches long. There was some slight attachment to the peritoneum, but it consisted merely of a few shreds, and the moment it was touched it gave way, the detached portion of the intestine being in a semi-gangrenous condition. This portion of the ileum became detached eighteen inches from the cæcum, and at this point there were two openings, into which you could pass a probe either up or down. On closer examination it was found that there was a mesenteric band a few inches long, which had constricted the gut, and had virtually detached nine inches of the ileum, which was found floating in the pelvic cavity. You may ask me how did this come about? I believe that the mechanical weight of the impacted cockles caused this loop of nine inches of the ileum to fall into the pelvis, where it was constricted by the mesenteric band above mentioned, and went on to ulceration and complete detachment. As regards a point of clinical value in this case, you will remember I told you that this woman passed urine in normal quantity all through her fatal illness. Now, much has been said on the symptomatic value of diminution and suppression of urine in such cases, as pointing to ileac impactions or constrictions as distinguished from those of the large intestine, but, in this instance, this clinical distinction, so much dwelt on by Barlow, did not hold, as the patient passed water freely until a few hours of her death.—*January 9, 1875.*

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MAY 1, 1875.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*Lessons from Surgical Practice.* By B. WILLS RICHARDSON, Fellow and Examiner, Royal College of Surgeons, and Surgeon to the Adelaide Hospital, Dublin.

HARE-LIP.

In the *Dublin Quarterly Journal of Medical Science* for November, 1871, I described a case of hare-lip, in which very successful results were obtained from the operation known as Langenbeck's modification of the procedure for preventing notching of the lip, attributed by many English surgeons to Malgaigne.

Langenbeck's method, according to my observation, is more suitable for the single lateral labial cleft than for the double labial cleft with central labial tubercle, for which form of hare-lip Malgaigne's operation is better adapted.

Although the hare-lip operation by double flap is so generally attributed to Malgaigne, it should be mentioned that Sédillot gives the credit of this mode of operating to a Monsieur Clémot, but is silent as to the date of Clémot's description of it, nor does he say where or in what form it was published.

The late Mr. Maurice Collis, on the other hand, gives the invention of this double flap operation to a Mr. Samuel Smith, of Leeds, from whom "he recollected" hearing it twenty-one years previous to the date of his communication on the æsthetic treatment

of hare-lip,* Mr. Smith having told Mr. Collis that he had devised it "some twenty or thirty years previously." But Mr. Collis could not say whether the description of this operation had ever been published by Mr. Smith. Under these circumstances it is probable that Malgaigne will continue to be credited with the invention of the operation.

The following description of Clémot's operation shows that it is identical with that of Malgaigne, *i.e.*, by double flap (Figs. 1, 2 and 3).

Fig. 1.

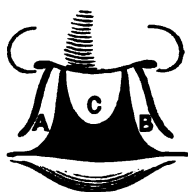


Fig. 2.

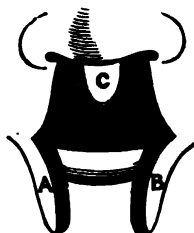


Fig. 3.



Diagrams of Malgaigne's operation for double hare-lip.

Fig. 1.—A B, lines of incision for the formation of the flaps. C, labial tubercle.

Fig. 2.—A B, the flaps suspended by their own weight from the free edge of the lip. C, the refreshed labial tubercle.

Fig. 3.—The refreshed edges of each half of the lip and labial tubercle secured together—A B, the downward projection formed by the apposition of the shortened flaps. C, labial tubercle. For perspicuity suture holes are only represented.

Clémot (Sédillot states) recommended "the refreshing of both sides of the lip by the formation of a thin flap, commenced beyond the superior angle of the fissure, and continued from above downwards as far as the union of the skin with the mucous rim of the free edge of the lip (Fig. 1, diagram). The two little lateral flaps thus formed fall vertically from above downward (Fig. 2, diagram), by their own weight, beyond the labial edge, their raw surfaces facing one another. They are to be united by a point of suture immediately above the mucous membrane, and their extremities are to be removed a few *millimètres* lower. The free edge of the lip then forms a prominent angle (Fig. 3, diagram), the relations of which are to be maintained with threads moistened with collodion, or by means of a very fine pin; and at the end of a little time the prominence of the lip disappears by simple retraction, the result being excellent. If the prominence is too great, part of it should be removed with scissors. The capital point is to place properly

* Dublin Quarterly Journal of Medical Science. Vol. XLV., p. 292. 1868.

in the same horizontal line the two portions of skin which touch at the mucous margin of the lip. If this last is wanting or insufficient, we are obliged, in order to prevent the notch, to invert and turn back the skin itself, and after recovery a very regular free labial edge is observed, nevertheless but little agreeable to the eye, because the skin remains white, and the mucous edge which re-appears, and continues it to the right and the left, contrasts with it, owing to its reddish vermilion coloration."

Sédillot gives a caution which should be strictly followed, lest notching—for the prevention of which this operation was chiefly devised—should result. "Experience," he says, "confirmed the advantages of Clémot's proceeding, but we recommend not to be too hasty in thinking that the prominence formed by the joined ends of the flaps is exaggerated. Their retraction is very considerable, and it is much better to wait a few months before excising any of them."

Not only does Sédillot credit Clémot with this operation, but also he attributes to a Monsieur Mirault an operation almost identical with the modification of it—devised, according to Mr. Spencer Wells, by Langenbeck (Figs. 4, 5, and 6), whose operation I will call it in this communication.

Fig. 4.



Fig. 5.

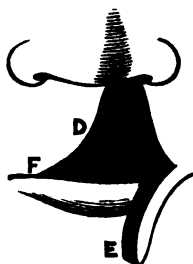
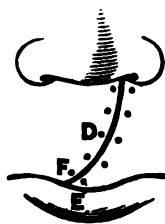


Fig. 6.



Diagrams of Langenbeck's modification of Maligne's operation. Most suitable for single hare-lip.

Fig. 4.—F D, line of incision convex towards the opposite half of the lip. The edge internal to F D should be removed with scissors. E, line of incision for the formation of the flap.

Fig. 5.—F D, the refreshed convex margin of the lip. E, the flap suspended from the free edge of the lip.

Fig. 6.—F D, the refreshed edges secured in apposition. E, the downward projection formed by the end of the shortened flap. For perspicuity suture holes are only represented.

In these figures it is supposed that the fissure exists at the left side; but should it be at the right side the different steps of the operation illustrated in them must be reversed.

Sédillot, with regard to it, likewise has omitted all mention of the date or the whereabouts of the original description of Mirault's operation.

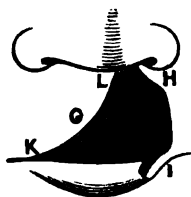
Mirault, according to Sédillot, "practises on one side refreshing in the ordinary manner (Figs. 4 and 5, diagrams), then he detaches, cleanly and squarely, a small portion of the inferior and horizontal free edge of the lip. He cuts from the other side a flap similar to those of M. Clémot (Figs. 4 and 5, diagrams) adapts it to the wound opposite in order to appreciate its length clearly, and after having cut off the superfluous portion, if necessary, applies it transversely and fixes it underneath the other half of the lip, of which it constitutes the free edge (Fig. 6, diagram)."

Sédillot describes, in his remarks on double hare-lip, a method for restoring the septum, which has been followed by M. Barrier, of Lyons. In this procedure the upper half of the Langenbeck flap is left adherent above to form the partition, whilst its lower half is used after the method of Langenbeck (Figs. 7 and 8, diagrams).

Fig. 7.



Fig. 8.



Diagrams of M. Barrier's modification of Langenbeck's operation for hare-lip.

Fig. 7.—G, line of incision convex towards the opposite half of the lip. The portion internal to G should be removed with scissors. H I, line of incision to be made by transfixion with either tenotomy knife or small scalpel. M, incision for the division of the modified Langenbeck flap into two.

Fig. 8.—The refreshed edges. H is to be brought to above L to assist in forming the septum, and I is to be brought over and secured at K. The intervening portion of the lip to be applied to G.

In these figures it is supposed that the fissure exists at the left side; but should it be at the right side the different steps of the operation illustrated in them must be reversed.

Barrier, it would seem then, saved the whole of the Langenbeck flap, as Mr. Maurice Collis more recently recommended to be done, Barrier having utilised its upper half to form the septum as I have

mentioned, whereas Mr. Collis used it for increasing the vertical depth of the portion of lip to which it belonged—i.e., the smaller side of the lip. This similarity between the two operations will be apparent to the reader from the following observations which I have reproduced from Mr. Collis's paper on the "*Æsthetic Treatment of Hare-lip*," to which I have already alluded.* (Figs. 9, 10, and 11, diagrams.)

Fig. 9.



Fig. 10.

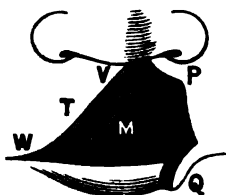
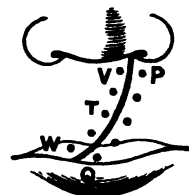


Fig. 11.



Diagrams of Mr. Maurice Collis's operation for hare-lip.

Fig. 9.—T, line of incision convex towards the opposite half of the lip. This incision goes through all the tissues of the lip except the mucous membrane. P Q, line of incision to be made by transfixion with either tenotomy knife or small scalpel. N, line of incision for the division of this modified Langenbeck flap into two.

Fig. 10.—Refreshed edges. M, turned-back paring attached to the lip by a hinge of mucous membrane. P is applied to V, Q is secured at W, and the intervening portion between P and Q corresponds to T.

Fig. 11.—The refreshed edges in apposition. Q, the downward projection formed by the end of the lower flap. For perspicuity suture holes only are represented.

In these figures it is supposed that the fissure exists at the left side, but should it be at the right side the different steps of the operation illustrated in them must be reversed.

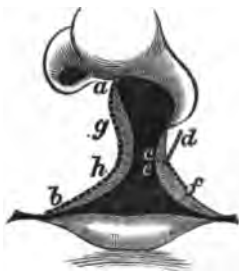
"My incisions," he states, "are made so as to make every fragment of them useful. On one side they are preserved to make the lip thick, and on the other to increase its depth. The method is somewhat complex, but a reference to Fig. 12^b will make it intelligible. When dealing with single hare-lip I take the larger portion, that which includes the middle bit, and pare it freely from the nostril round the margin, from *a* to *b*, until the point of the knife comes opposite the frenum. This incision goes through all the tissues of the lip except the mucous membrane. It follows the curved line of the margin of the fissure, and leaves a long wound, which is curved, toward the fissure. The flap is left loose, and attached only by mucous membrane (Fig. 10, diagram). On the

* Ibid.

^b Fig. 5 in the original.

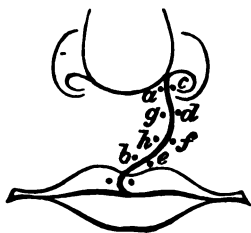
other or smaller side, where we generally find the tissues thin, especially as we approach the nostril, the treatment is quite different. I transfix the lip at *d* (Figs. 12 and 9, diagram), close to the nostril, and carrying the knife along parallel to the margin, as far as *f* (Fig. 12). I detach a moderately broad flap, which I leave adherent above to the ala nasi, and below to the free margin of the lip (Fig. 12), well beyond or external to the rounded angle at the fissure."

Fig. 12.



"This flap, which (unlike the one at the opposite side) comprises all the tissues of the lip, is now divided into two at its centre, *c e* (Figs. 9, 10, diagrams, and Fig. 12). I thus get two loose flaps, a superior *c d* attached to the ala nasi, and an inferior *e f* hanging on to the free margin of the lip. The loose end of the upper flap is turned up so that its raw surface faces the wound in the opposite side of the fissure, and the loose end of the lower flap is similarly turned down. The point *c* is brought up to *a* (Figs. 12 and 13), and fastened there. I have thus got on the small side of the lip a wound as extensive as that on the larger side. The upper flap completes the outline of the nostril. The lower one supplements the outline of the free margin of the lip. I thus get a lip nearly double in depth what I could possibly have got by the ordinary incision."

Fig. 13.



There is some obscurity in Mr. Collis's account of the mode of dealing with the "paring" which he incompletely separated from the larger portion of the lip, and left attached by the hinge of mucous membrane (Fig. 10), and which I again reproduce here, and may repeat Langenbeck removed altogether.

"When dealing," says Mr. Collis, "with single hare-lip, I take the larger portion, that which includes the middle bit, and pare it freely from the nostril round the margin, from *a* to *b* (Fig. 12), until the point of the knife comes opposite the frenum. This incision goes through all the tissues of the lip, except the mucous membrane (Fig. 10, diagram). It follows the curved line of the margin of the fissure, and leaves a long wound, which is curved towards the fissure. The flap is left loose, and attached only by mucous membrane."

Now if we even allow for shrinking after having been cut, this paring, which Mr. Collis leaves attached to the lip by the hinge of mucous membrane, forms with the refreshed lip a raw surface of greater depth from before backwards than the raw surface presented to it by the opposite or thinner side of the lip, and the flaps afforded by it. The raw surface, therefore, of the turned back or hinged flap (Fig. 10, diagram) cannot, by his method of suture, be kept in perfect relation with the raw edge of the opposite or thinner side of the lip and the flaps, except in the situation of the sutures, and this only when they have been carried completely through the lip, so as to include the hinged paring, where it corresponds to each of them. Moreover, the relative thinness of the smaller side of the lip, antero-posteriorly, would still further militate against a perfect correspondence of the refreshed surfaces.

Theoretically I should say that as the raw surface of the hinged paring (Fig. 10, diagram) cannot be secured in contact with a corresponding raw surface, owing to the thinness of the smaller side of the lip, there would in some subjects be a liability to blood oozing from it during suction, should they be allowed to try this mode of alimentation. Mr. Collis does not, however, speak of the occurrence of bleeding in any of his cases, nor does Mr. Bryant allude to it, although he "has followed his (Mr. Collis's) suggestions in some half-a-dozen cases with admirable success," and is "disposed to think that in his main arguments he is right." Mr. Bryant considers that this "plan of Mr. Collis is very excellent" for "hare-lip with unequal sides."*

* The Practice of Surgery. A Manual, by Thomas Bryant, F.R.C.S. London: 1872.

Having made these prefatory remarks, chiefly for the information of the student, I will now give the particulars of two cases in which I performed Langenbeck's operation with very favourable results, the downward projection of Cupid's bow being very well supplemented by the lower end of the flap.

Single Hare-lip, complicated with Cleft of both Palates.

CASE I.—Samuel H., aged six months, was admitted to the Adelaide Hospital on the 15th of January, 1874, to have an operation for hare-lip performed upon him. The child was apparently in every respect healthy. He had not cut a tooth, nor did the gums indicate any activity in the process of dentition. The parents were unaware of any previous history of hare-lip in their families.

There was a complete single cleft of the lip at the left side, which was complicated with cleft of both palates. The right superior maxillary bone seemed to project a little forward, carrying with it the intermaxillary bone, the right side of which was united with it (Fig. 14).

Fig. 14.



Samuel H., before operation.

The left or free edge of the intermaxillary bone was thin, and it likewise was turned forward. The left side of the face, together with the corresponding side of the nose, did not seem to be of equal development with the right side.

Having partially divided the superior attachment of the intermaxillary bone with Butcher's intermaxillary cutting forceps, I had

no difficulty in semi-rotating and at the same time dislocating it backwards into the gap that existed between its free edge and the left maxilla.

I then dealt with the soft parts after Langenbeck's modification of Malgaigne's operation, the right or larger side of the lip having been refreshed in the manner I have mentioned, and the flap having been formed at the opposite or smaller side of the lip (Figs. 4 and 5). The flap was then allowed to turn down (Fig. 5), and remained suspended by undivided tissues at the free margin of the lip until the pins were inserted. Two very fine hare-lip pins, with twisted suture, were found sufficient to maintain the chief portion of the refreshed surfaces or edges in accurate contact. The flap was then shortened by the removal of as much of its free end as would enable the remainder to be accurately adapted to the lowermost portion of the curved raw surface prepared for it, with which, finally, it was secured in contact by means of a couple of very fine silk interrupted sutures (Fig. 6).

Hainsby's truss was next applied, and in a few hours the surface of the lip was painted with thick collodion.

Collis suggests that the collodion should be made very thick, as the "ether in thin collodion acts injuriously on the healing process." This, I believe to be good advice, for thin collodion is apt to insinuate itself between the refreshed edges, and may, as he suggests, act injuriously. Indeed, even when of thick consistence, I do not advise its use until the refreshed edges have had time to agglutinate with one another. Although non-union after hare-lip operations had been observed so long prior to the discovery of collodion, nevertheless it is probable that its insinuation between the refreshed edges might, in a person of low vitality, intercept the healing process.

When placed in bed, the child was given some white wine whey, and afterwards a hydrate of chloral draught, the whey to be given at regular intervals, and the draught to be repeated if necessary for producing sleep.

31st January.—I removed the lower pin, and union appeared firm. The truss was continued, and as the child seemed to suffer from colicky pains, it was given some carminative mixture.

1st February.—I removed the second pin, but left the silk thread in position, being so firmly glued to the lip by means of the collodion; union appeared perfect; truss continued.

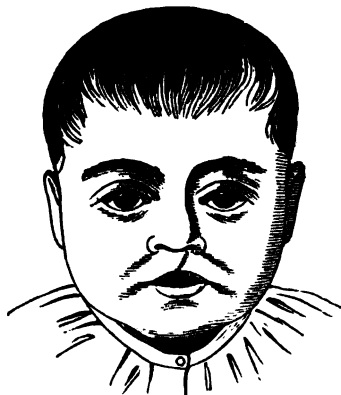
4th February.—The silk thread having partially unglued was

removed, as well as the fine silk interrupted sutures which retained the end of the flap in position.

5th March.—The truss was worn up to this date. The anterior portion of the intermaxillary cleft seemed to have completely closed.

Any further reports of the case are unnecessary, for with the exception of a slight catarrhal attack, all went on well, and I was enabled to allow the child to be brought home on the 27th of March. A day or two previous to this date, our hospital surgeon dentist, Mr. William Pearsall, kindly took an excellent likeness of it in water colours, from which the following figure (Fig. 15) was engraved. It accurately represents the appearance of the lip, and shows the central papilla formed by the end of the flap, which was brought over from the smaller side of the lip.

Fig. 15.



Samuel H., after operation.

Single Hare-lip, complicated with Fissures of both Palates. Intra-uterine Union of the Lip with the right side of the Labial Tubercle, the case having been originally a Double Hare-lip.

CASE II.—J. S., aged five months, was brought to me to have the operation for hare-lip performed upon it. There was no history of hare-lip in the family.

To my mind there was sufficiently strong evidence to support the inference that this hare-lip had been double in early foetal life, with both labial and osseous tubercles, the right edges of which had united, during some portion of the child's intra-uterine existence, with those parts with which they should be normally

united—viz., the right portion of the lip, and the right superior maxilla. I base this opinion upon the following evidence:—The right side or edge of the labial tubercle, or central portion of the lip, furrowed with the filtrum, was united by means of a cicatricial-looking structure to the corresponding edge of the right or larger portion of the lip. This cicatricial-looking union was situated at the bottom of a relatively deep groove, which extended from the right naris above to a deep notch inferiorly, where the uniting medium terminated (Fig. 16). In fact, as far as this notch was concerned, nature was by no means successful in preventing deformity, for I have seldom seen so deep a notch left after a partially unsuccessful surgical operation for hare-lip.

Fig. 16.



J. S., before operation.

The left edge of the intermaxillary bone, which was free, was turned slightly forward, and was separated from the left superior maxilla by the anterior termination of the palatal cleft.

The child being apparently healthy and strong, I performed, on the 6th June, 1874, Langenbeck's operation for hare-lip (Figs. 4, 5, and 6), in the presence of my colleague, Dr. James Little, and of Mr. John Morgan. An anæsthetic was not administered.

The upper attachment of the intermaxillary bone was notched with Butcher's intermaxillary cutting forceps, and the bone was then partially dislocated backwards, so as to occupy the gap that existed between its free edge and the left maxilla. A little of this edge, however, had to be previously removed, the intermaxillary bone being too wide for the space destined for its

reception when dislocated. The right or larger portion of the lip, together with the left edge of the labial tubercle, were pared with scissors, so as to refresh their edges (Figs. 4 and 5), care having been taken to remove the apex of the tubercle, with the view of obliterating the notch which existed between its apex and the margin of the lip (Fig. 16).

The flap was then formed, at the left side of the lip, with a short narrow-bladed knife (Figs. 4 and 5); but this was so badly developed, vertically, that the whole flap was only of sufficient length for complete adaptation to the curved refreshed edge of the right lip, and, therefore, none of it was removed.

The upper three-fourths of the refreshed edges were brought and maintained together with two fine hare-lip pins, the upper pin having been inserted as near the opening of the naris as possible. Inferiorly the free end of the flap was secured in position with two very fine silk interrupted sutures, inserted with curved needles of the smallest calibre made (Fig. 6).

But little blood was lost during the operation. When this was completed, Hainsby's truss was applied, and the baby was ordered a teaspoonful of a hydrate of chloral mixture every hour until sleep supervened. A teaspoonful of a brandy and milk mixture was also to be given occasionally, should it appear exhausted.

7th June.—Only three spoonfuls of the hydrate of chloral mixture had been given when sleep commenced.

8th June.—The child seemed to suffer from occasional tormina, and was ordered a carminative mixture composed of compound tincture of rhubarb, calcined magnesia, aromatic spirit of ammonia, tincture of opium, with glycerine and water; Hainsby's truss was continued.

9th June.—I removed the lower pin, and union in the lower half of the lip was found to be perfect; the collodion and Hainsby's truss were continued.

10th June.—I removed the remaining pin; union in the upper part of the lip perfect likewise; collodion and Hainsby's truss were continued; the threads of the twisted sutures, being firmly glued to the lip, were not disturbed.

17th June.—The collodion separated from the lip, and carried the suture silk with it; lip perfectly united, even into the left naris, and inferiorly the extreme end of the Langenbeck flap had united perfectly with the lowermost portion of the refreshed curved edge of the right half of the lip, including the refreshed apex of the

labial tubercle—consequently the whole lip was of equal vertical depth. Some zinc cream was directed to be applied to the lip, and Hainsby's truss to be continued.

18th June.—Removed the fine silk interrupted sutures that secured the end of the Langenbeck flaps in position; use of Hainsby's truss continued.

20th June.—Hainsby's truss was discontinued on this day, union being firm. A few days afterwards the child was allowed to the country, but previous to its leaving town the likeness was taken, a reduced copy of which (Fig. 17) was made by Mr. Alfred Oldham.

Fig. 17.



J. S., after operation.

In this drawing the curved cicatrix is accurately represented, and inferiorly the projection downwards of the adherent end of the Langenbeck flap, which is a fair imitation of the central projection of Cupid's bow.

I have mentioned in the description of this case that from the appearance observed on the right or larger side of the lip represented in Fig. 16, I believed that it had been a double hare-lip in early foetal life, and that union had occurred to a sufficient extent, at a later period of its intra-uterine existence, to convert the case, as far as regards the lip, into a single labial cleft.

I have had two other patients under my observation, a child and an adult, whose lips presented appearances of hare-lip cicatrisation similar to the supposed intra-uterine formed cicatrix seen in this case—namely, a groove on each lip, at the bottom of which a cicatricial-looking structure existed. The groove in each case led to a deep notch at the free margin of the lip.

The mother of the child was most positive that a surgical operation had never been performed upon it, and the adult was equally positive that she, also, had never been operated upon for hare-lip. In neither case was there any mark of suture cicatrisation.

When we recollect, however, that there are many people with minds so constituted that they would probably consider it degrading to admit that they themselves or their children had ever been born with cleft-lip, stronger evidence than mere verbal evidence should be required in the endeavour to decide a question of this kind. Such additional proof was afforded by the case represented in Figs. 16 and 17, in which a surgical operation could not have been performed previous to the child coming under my observation, and in which the appearances of a partial intra-uterine union could hardly have been more decisive.

This question is not altogether a new one, for Mr. Spencer Wells, in the article on Hare-lip, in the last edition of "*Cooper's Surgical Dictionary*," mentions that Wagner had seen two cases in which union of the labial cleft took place within the uterine cavity. Dr. P. Frank, who saw one of these cases, informed Mr. Wells that it was on the left side of the upper lip union had taken place, with a distinct red cicatrix, and, as in my case (Fig. 16), there was a deep indentation of the free margin—which, as Mr. Wells so truly observes, it is our object to avoid in operative proceedings.

The foregoing observations, I need scarcely remind the reader, refer merely to Malgaigne's operation for hare-lip, and to two of its most important modifications. They are to a great extent a reproduction of a lecture I delivered in the Adelaide Hospital during the session of 1873-4, on those operations which I generally practise, having found Malgaigne's and Langenbeck's procedures thoroughly effective in forming a good vertically deep lip, without tendency to notching.

In conclusion, let me observe that I have found the scissors the most handy instrument for forming the convex curved refreshed edge of the larger portion of the lip, and a small narrow-bladed scalpel, or a tenotomy knife, the proper instrument for cutting the flap in the Langenbeck operation. But in the Malgaigne operation itself, when practised for double hare-lip with labial tubercle, the scissors should be used for refreshing the edges of the latter only.

The scissors in ordinary use for hare-lip operations are unnecessarily large. A short-bladed and short-handled scissors will be found a much more manageable instrument than it.

The fingers of the operator are sufficient for fixing the larger

portion of the lip in the Langenbeck operation. But a small hook should be used for steadying the portion of lip which supplies the flap in either the Langenbeck or Malgaigne method.

Should the twisted suture be practised for securing the refreshed edges of the lip together, the ingeniously devised needle-guard of Mr. Tyrrell, delineated and described in the number of this Journal for September, 1874 (Vol. LVIII., p. 223), will be found a useful appliance, and one calculated to afford us some assistance in the management of a hare-lip case, and to spare the patient the additional pain caused by the withdrawing of the broken end of the needle through the flesh, particularly when it has been a little bent by the action of the cutting pliers, which is very common when the needle has not been properly tempered.

ART. XVIII.—*Notes on some Diseases of the Skin*—(a) *Favus*; (b) *Erythema multiforme*.^{*} By WALTER G. SMITH, M.D.; Univ. Dubl.; Fellow and Censor of the King and Queen's College of Physicians; Assistant Physician to the Adelaide Hospital.

I. FAVUS OF THE HEAD, TRUNK, LIMBS, AND NAILS.

II. FAVUS OF THE EPIDERMIS ALONE.

III. FAVUS OF THE EPIDERMIS ALONE.

IV. ERYTHEMA MULTIFORME.

I PROPOSE to bring before the Society this evening the notes of a few cases which derive their interest in part from their comparative rarity, but chiefly as exhibiting some features in respect of diagnosis which are of practical consequence. I shall first speak of favus, or, as it is now called, tinea favosa.

A curious point in the natural history of favus is its very unequal distribution in the limited area of Great Britain and Ireland, as tested by statistics collected in their respective capitals. Thus, in Scotland, Dr. McCall Anderson met with it 160 times in 11,000 cases—i.e., about $1\frac{1}{2}$ per cent. In England it is extremely rare, is seldom seen except among the poorest classes, and even at the special hospitals in London not more than two or three cases are observed in a year. Indeed, Dr. Dyce Duckworth, during four years, out of 4,000 or 5,000 cases of skin disease, had met with only four cases of favus—i.e., one in 1,000. Among 3,000 private patients, Mr. Erasmus Wilson recognised it twice only. In Dublin I

^{*} Read before the Medical Society of the College of Physicians, April 14, 1875. [For the discussion on this paper, see page 455.]

have seen seven cases in as many years out of a total of about 4,000 cases, and, curiously enough, four of the seven cases were observed in the one year—1873. From March, 1870, until January, 1873, not a single case of favus came before me. Five of the seven cases occurred in females. The rarity of favus in this country should be insisted on in reference to diagnosis, for it is not at all impossible for one not familiar with the disease to confound an old dried impetigo of the scalp with the amorphous crusts of the diffused stage of favus, or, as in a case of a practised observer such as Hardy (*Nouv. Dict. de Méd. et de Chir.* XIV., 1871), the microscope may be requisite to fix the diagnosis between it and psoriasis.

When favus does present itself it is in the large majority of instances restricted to the head, and seems to flourish especially on the poorest and most destitute soil. Of the two other situations in which favus still more rarely occurs—viz., the smooth surface of the body, and the nails—it is almost invariably transferred to these parts from the head by scratching. The original, and, in most cases, the only habitat of the *achorion fungus*, is the hair follicle.

Primary development of this parasitic disease upon the epidermis, apart from any implication of the scalp or nails, must be counted as one of the rarities of dermatology, and I have been fortunate in meeting with two cases of it within a few months. Correct diagnosis and immediate treatment are of prime importance in this event, when we consider the intractable pest which favus proves if once it secures a hold upon the scalp, while its eradication from the smooth epidermis is as easy as it is satisfactory.

The great rarity of favus of the epidermis is apparent from the fact that, even in Scotland, Dr. M'Call Anderson had only four opportunities of seeing it out of 11,000 cases, and these four examples, moreover, were all in members of the same family, amongst whom it had spread by contagion.

CASE I.—*Favus of the Head, Trunk, Limbs, and Nails.*

In March, 1873, Mary C., aged thirteen, presented herself at the Dispensary for Diseases of the Skin, Adelaide Hospital. She was a pale, cachectic looking child, puny, and ill-developed, and stated that the present disease broke out when she was about seven years of age. The head was first engaged, then the body, and afterwards the nails. She had never got rid of the disease, and, when seen, she was in a disgusting state, and exhaled a strong fœtid odour. In order to relieve her miserable state she

was admitted into the Adelaide Hospital. The *head* was thickly covered with dense, friable, dry crusts, in many places irregular and amorphous, but here and there showing well-marked yellow circular cups (*favus lupinosus*). The hair was much thinned, dull and dry in appearance, and on the vertex were several smooth bald patches. The *nails* were rough, distorted, and fibrous-looking, of a dirty brownish yellow, and they were *quite soft*, especially after washing. On the *body* the disease had spread extensively, chiefly on the dorsal surface of the trunk, and one or two spots were observed on the abdomen. The main patches were on the back of each shoulder, about the size of the palm of the hand. Extending from the right scapula to the loins was a large mass of crusts nearly one foot in length. A few distinct sulphur yellow cups were detected on the body, associated with some small sharply-circular yellow patches about the size of a fourpenny-piece, with concentric ridges, not at all unlike small bits of calumba root. But on the larger patches the crusts were heaped up irregularly to the depth of from one-half to three-quarters of an inch. They were dark brown, rugged, and fissured, and bore no little resemblance to the corky bark of a tree. These crusts were loose at their edges but adherent in the centre, and if forcibly removed an exudation of blood occurred. When the crusts were all detached by repeated soakings in warm baths, the surface of the skin was seen to be red, elevated, somewhat like irregular patches of ringworm, or of psoriasis from which nearly all the scales had been separated. Under the use of warm baths and poulticing the accumulated crusts on the body were speedily separated, and it was truly remarkable in how short a time the subjacent skin regained its normal appearance. Little impression was made upon the inveterate growth upon the scalp, for her stay in hospital was limited to a few days, and her visits to the dispensary were occasional. After leaving the Adelaide Hospital she was in the Meath Hospital for a time under the care of Dr. A. W. Foot. I have seen her two or three times lately, and although the repulsive disease tenaciously maintains its characters on the head, the rest of the body has remained perfectly free from any re-appearance of the eruption for two years. It is just possible that a spontaneous cure may eventually occur; or, what is more probable, by destruction of the sebaceous glands, hair follicles, and other structures, the hairy scalp being reduced to a membranous state, like parchment, the fungus itself will perish for lack of nutriment.

CASE II.—*Favus of the Epidermis alone.*

Rosanna B., aged thirteen, a fairly grown, well developed girl, with red hair, applied for advice at the dispensary, December, 1873. She was in good health up to four years ago, when she contracted measles. As the disease disappeared, the glands in the neck began to enlarge; in about a year suppuration set in, and ever since she is subject to cervical abscesses. She never had any eruption whatever on the head or body until three weeks before I saw her, when a small red patch appeared between the shoulders. It was studded with three small yellow specks, and soon enlarged to its present dimensions—i.e., an irregular rhomboidal patch, about $1\frac{1}{4}$ by $1\frac{1}{4}$ inch in size. In a few days several minor red patches sprang up in the neighbourhood, and over the spines of the scapulæ. The patches were perfectly dry, somewhat papular, and were scantily covered with thin yellow scales. In the centre of the large inter-scapular patch was an irregularly circular, sulphur yellow crust—dry, friable, and powdery—which arose abruptly from the skin, and was circumscribed by an elevated yellow rim. The centre of the patch was dull yellowish white, the colour of *precipitated sulphur*, the border bright yellow, like *sublimed sulphur*.* The crust was easily detached, and was seen to rest upon a dusky red irregular bed. The achorion fungus was abundantly detected in the crust, and there was no appearance of ordinary ringworm on other parts of the body. No source of contagion to account for the origin of the disease could be traced. The crust was removed by poulticing; a corrosive sublimate lotion ($\frac{1}{2}$ gr. to 3i.) was applied, and afterwards carbolic ointment. A number of small, red, punctated spots appeared between the shoulders, but within a few days she was perfectly well, a red mark persisting for a time on the site of the large patch, and up to this date there has been no recurrence of the disease.

CASE III.—*Favus of the Epidermis alone.*

Edward N., aged thirty-three, a porter, applied at the dispensary, April, 1874, for advice concerning an eruption. He stated that about a fortnight ago a small, yellowish white pimple, the size of a pea, with a red margin, appeared on the upper part of the left shoulder. The centre was cupped; it was perfectly dry, was not attended with itching or pain, but was slightly tender on pressure. The yellow centre remained stationary, while the

* The appearances were almost identical with those depicted in coloured plate facing p. 18 of Dr. McCall Anderson's work on *Parasitic Affections of the Skin*. Second edition.

red erythematous margin increased in size. The site of the disease was midway between the acromial end of the clavicle and the coracoid process. In shape the patch was oval, about $1\frac{1}{4}$ inch in length by 1 inch in breadth, with a pale yellow centre resembling precipitated sulphur, and exhibited a number of minute depressions or cups. The crust was quite dry, and was surrounded by a reddish rim, over which were scattered a few white scales. No other patches existed on any part of the body. The man was married, and had one child. Neither wife nor child had any affection of the skin. There was a cat in the house, but he had never taken it in his hands or come in contact with it to the best of his recollection. Under suitable treatment, as before, the eruption speedily and entirely disappeared.

In neither of these cases did the disease spread to any other individual in the house, and no source of infection was elicited. It is worth noting the facility with which favus of the epidermis can be radically cured. The circular, red, scaly patches, observed in Case II., adjoining the pathognomonic yellow favus cups on one of the patches, could not fail to remind one of ordinary ringworm; and at first, indeed, I thought them to be so. This raises the question whether favus, or the honeycomb ringworm, owns the same parentage as common ringworm, or, in other words, can favus inoculation give rise to tinea circinata and tinea tonsurans, the common ringworm of the body and head? That the two diseases may co-exist is not improbable; and, indeed, Plate II. of the *New Syd. Soc. Atlas*, copied from Hebra, purports to represent this coincidence. But it can be reasonably urged that these red patches are only the initial step in the development of favus. In any case, occasional coincidence would not in itself prove a genetic relation between the two affections, and I do not think that sufficient evidence has yet been adduced of the transmutability of favus. This is, I believe, the true reading of such cases as that so well recorded by Dr. Purser in the *Dubl. Quart. Journ. of Med. Science*, Aug., 1867, in which inoculation of a favus crust from a cat appeared to give rise to ordinary ringworm, but the patches were destroyed in a few days—too soon to decide the question. Those who maintain that favus in a lower animal can induce tinea circinata in man, i.e., who believe in the identity of the fungi, should be prepared to show the converse also, viz., that tinea circinata in the lower animal can by inoculation cause favus in man. The appearances in Case II. were in accordance with Bazin's observation that the erythematous

circles of incipient favus may be distinguished by their small and uniform size, coupled with less tendency to spread centrifugally, from the circles of *tinea circinata* (ringworm of the body), which have a variable diameter, and are sometimes very large. On the scalp the presence of hair is a bar to the distinction, and the diagnosis cannot be made with certainty until crusts begin to form. From the difficulty of tracing with absolute certainty the path of transmission in sporadic cases, the matter can be definitely settled only by careful inoculation experiments, and it is more than probable that, *if sufficient time be allowed for the results to mature*, favus will invariably be found to give birth to favus, and never to *tinea circinata*. In support of this view, I may mention that on one occasion I inoculated my own arm and that of my friend, Dr. Charles Ball, with true favus *débris*, and in due time (18 days) several indubitable favus cups were produced, but not ringworm. Horand relates a case in which a girl, aged fifteen, contracted favus from a cat; and he mentions that, in one situation—viz., on the back of the left hand, the affection resembled *tinea circinata*, but it exhibited the *achorion fungus* under the microscope. In another case a woman contracted favus on her forearm, from having introduced her hand into a rat-trap, in which a rat affected with favus had been caught. The husband, who had touched the rat, also became affected with the disease.—(*Virchow and Hirsch's Jahresbericht*, for 1873, p. 569, from *Lyon Médic.*, No. 21.) It is, then, important to remember that the early stage of favus closely simulates, and may be mistaken for common ringworm, and in doubtful cases the practical lesson is that energetic measures should at once be taken to stamp out the disease, lest an obstinate and disgusting affection be allowed to implant itself.

I pass on now to relate a case of an affection which, not very uncommon in its local and partial manifestations, is extremely rare in the diffused and well-pronounced form. Out of 11,000 cases, Dr. McCall Anderson has observed only a single instance of it. I refer to the disease which has been appropriately named by Hebra *Erythema Multiforme*, a term which commends itself as unifying a number of varieties, or rather stages of one cutaneous disease, which have from isolated observations been erroneously catalogued as distinct species. Under this title Hebra ranks all the forms of acute erythema accompanied with distinct swelling, except erythema nodosum, which he reckons as an independent

malady. However, the existence of this latter affection as a distinct species does not appear allowable in the face of the interesting case which Mr. Hutchinson has put on record, and which furnishes an invaluable connecting link between erythema nodosum and the admitted varieties of erythema multiforme.—(*Brit. Med. Journ.*, July 23, 1870.)

I have also observed the concurrence of erythema nodosum with the papular and tubercular forms, and believe them all to be phases of the one disorder.

CASE IV.*—*Erythema Multiforme.*

William L., aged forty-one, admitted into the Adelaide Hospital, February 1st, 1875, under the care of Mr. Richardson, who kindly asked me to see the case.

The patient was entirely free from any eruption until five days before his admission, when he noticed on the back of his forearms small elevated spots. Two days subsequent to their first appearance a pink ring formed around them, which increased in circumference, leaving the papule as a small dark speck in the centre. Simultaneously a similar eruption spread gradually over all his body, observing great symmetry in the parts it attacked. When admitted the man presented a very singular appearance. The eruption was diffused over the whole trunk with the exception of the lower three-fourths of the sternum, and a space of about the same size between the scapulæ. It was also absent over the spinous processes of the vertebræ, a long streak of healthy skin separating the two tracts of the eruption on either side. The face was spared, and the rash was well marked on the lower extremities down to the dorsum of the foot, to which it had spread by the sixth day. The eruption presented great varieties of appearance. At some places there were merely a large number of elevated flattened distinct papules crowded together (*E. papulatum*); at others the eruption presented the appearance of circular erythematous patches fading away in the centre (*E. annulare*); again, at other places the pinkish rim assumed a curious and grotesque variety of form, presenting a serpentine and gyrate appearance (*E. gyratum*). Seated on the margins exclusively of the patches, appeared in most situations a number of close-set but distinct small vesicles containing a whitish turbid fluid. Six days from its first appearance the eruption began to fade where it first came out—viz., on the forearm, and the skin commenced to

*Notes by Mr. A. Dobbs.

desquamate, slight yellowish pigmentation remaining behind. The week previous to the appearance of the eruption, he states that he was suffering from megrim and malaise, but upon the outbreak of the eruption these ceased. His only subjective annoyance was a feeling of burning heat in the skin, preventing him from sleeping well. The mucous membranes were unaffected by the eruption. He can assign no cause for the disease, and never had any rheumatic affection. His temperature was 100.2° . His general health was excellent. Secretion from the small vesicles strongly alkaline. Morning urine dark, markedly acid.

February 4th.—The tiny vesicles which existed on the edges of the circles have desquamated, particularly over the surface of the chest and arms. On the legs the eruption has assumed a purpuric character, the circles being marked by a distinct ecchymotic line, and the centres of the annuli are yellow. Over the rest of the body the eruption had faded considerably.

5th.—No fresh outbreak. The patient suffers from no annoyance except itching. The eruption generally has lost its red colour, except on the legs, but the limits of it are plainly marked by the persistent dusky colour, or, in some situations, as on the trunk, by the yellowish pigmentation. The palms of hands and soles of feet escaped entirely; abundant fine, white, loose, branny desquamation.

8th.—Still desquamating; pigmentation over area of original eruption still well marked. Yesterday, on the front of each arm and on inside of right thigh, a number of small, irregularly oval patches of a pale red colour, slightly raised, and itchy, have appeared. In a few days more all traces of the eruption had vanished, and he was able to leave hospital. No special treatment was found requisite.

Although the development of small vesicles upon the red patches was a noticeable feature in this case, the reasons for diagnosing it to be an erythema and not a herpetic eruption, may be enumerated as follows:—(1.) Its abrupt commencement and characteristic outbreak on the backs of the arms and hands. (2.) The order of its progress. (3.) Its precise and accurately marked symmetry. (4.) The consequent pigmentary stains and fine desquamation. (5.) Its short duration and spontaneous subsidence.

In several respects the appearances in this case suggested a comparison with the cases of constitutional skin disease described by Bazin under the name of *Hydroa*, and in evidence of this I may refer to a very excellent report on *Hydroa* and allied diseases,

which was published in the *Brit. Med. Journ.* for 1870. A case similar to the one recorded above is reported by Dr. Bell (*Lancet*, Nov. 5, 1870.)

I may mention in passing that the troublesome itching which sometimes attends erythema papulatum is effectually relieved by a combination of lead lotion (3vi), and olive oil (3ij).

From time to time a good many cases of the slighter forms of this curious and protean affection have come under my notice, but this was the first case which exhibited all the stages of gradation from the simple erythema papulatum to the highest grade—viz., erythema gyratum, and thereby pointed explicitly to the essential oneness of all the intermediate forms. Mistakes are frequently made in the diagnosis of erythematous diseases, partly owing to their transient and quickly changing characters. In more than one instance I have known the diagnosis of psoriasis or of syphilis to have been made—a risk of error which confers some practical importance on the subject.

ART. XIX.—*Pythogenic Pneumonia*. By THOMAS WRIGLEY GRIMSHAW, A.M., M.D., Dubl.; Fellow, King and Queen's College of Physicians; Physician to Doctor Steevens' and Cork-street (Fever) Hospitals: and JOHN WILLIAM MOORE, M.D., Dubl.; Fellow, King and Queen's College of Physicians; one of the Physicians to the Meath Hospital, and Assistant-Physician to Cork-street (Fever) Hospital.*

I.—INTRODUCTORY.

HOSPITAL physicians have long observed that, contrary to *à priori* considerations, pneumonia—a disease which might naturally be regarded as peculiar to winter—discovers a tendency to prevail even in the warm season of each year.

The weekly reports of the Registrars-General also bear striking testimony to the occurrence of a comparatively high mortality from pneumonia in early summer and autumn.

Lastly, the subject has engaged the attention of a scientific writer,^b who, in an admirable essay on the "Etiology of Pneumonia," has investigated the relations between meteorological conditions and

* Read before the Medical Society of the College of Physicians, Wednesday, April 14, 1876. [For the discussion on this paper, see page 458.]

^b Dr. Octavius Sturges. *St. George's Hospital Reports*. Vol. V. 1870. P. 135.

this disease, and has arrived at conclusions strictly in accordance (so far as they go) with those advanced in the present communication. Dr. Sturges, the author referred to, writes:—

“It appears that the lowest mortality of both pneumonia and bronchitis falls in the latter part of summer, and the highest of both during the winter. The proportion of deaths, however, for the two diseases is not constant throughout the year. During the five or six temperate months—say from May to October—this proportion approaches nearest to 1, *it being not unusual at midsummer for the mortality from pneumonia even to exceed that from bronchitis.* But about the latter end of October or thereabouts, sooner or later according to temperature, the bronchitis rate rises in a greater degree than the pneumonia rate, and the maximum of difference for the two is obtained about January or February. It will be found, moreover, that while the minimum of deaths for both occurs at or about the same time—namely, in August and September—the maximum of deaths is earlier in the case of pneumonia than in bronchitis.”

In an accompanying Table, compiled from the Returns of the Registrar-General for Ireland, the number of deaths from bronchitis and pneumonia, in the nine years ending 1873, are entered according to the season of the year in which they occurred. The results are full of significance. We find that of every 100 deaths from bronchitis, on the average 44 occurred in the first quarter of the year, 22 in the second, only 10 in the third, and 24 in the fourth quarter—the exact percentages being 44·5, 21·9, 9·7, and 23·9, respectively. Thus the mortality from bronchitis was twice as great in the first than it was in the second quarter, and more than four times as great in the first than in the third quarter.

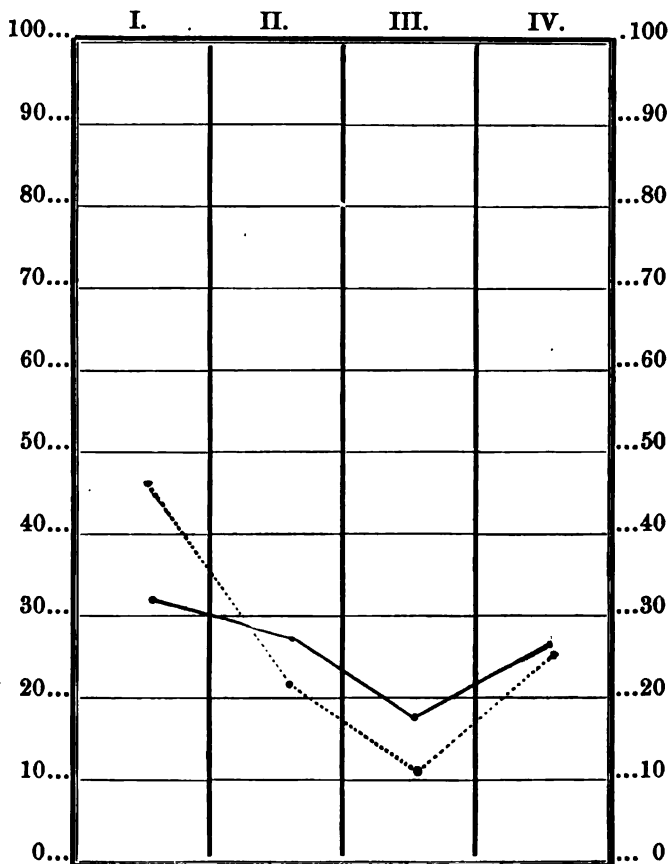
Very different are the facts connected with pneumonia—on the average, of every 100 deaths from this disease, 32 occurred in the first, 27 in the second, 16 in the third, and 25 in the fourth quarter. More correctly, 31·7 per cent. of the pneumonia deaths took place in the first, 26·6 in the second, 16·2 in the third, and 25·5 in the fourth quarter. The mortality from pneumonia was only *one-fifth* greater in the first than in the second quarter, and only twice as great in the first than in the third quarter. The extreme winter fatality of bronchitis, and its low summer fatality, are equally wanting in the case of pneumonia. These points are graphically shown in the diagram.

* *Loc. cit.*, p. 137.

TABLE I.—*Showing the Number of Deaths from Bronchitis and Pneumonia in the Dublin Registration District in each Quarter of the Years 1865-73, inclusive.*

Year	Quarter I.		Quarter II.		Quarter III.		Quarter IV.		Total Deaths from		Year
	Bronchitis	Pneumonia	Bronchitis	Pneumonia	Bronchitis	Pneumonia	Bronchitis	Pneumonia	Bronchitis	Pneumonia	
1865	638	64	236	49	81	24	244	46	1,199	183	1865
1866	494	65	292	52	103	44	180	36	1,059	197	1866
1867	663	54	251	40	126	29	255	57	1,295	180	1867
1868	371	52	220	48	109	29	279	41	979	170	1868
1869	422	66	277	57	127	34	315	49	1,141	206	1869
1870	432	42	202	48	109	18	292	53	1,085	161	1870
1871	549	80	247	49	74	27	833	36	1,203	192	1871
1872	418	40	262	52	127	23	269	45	1,076	160	1872
1873	542	55	255	39	139	37	287	54	1,223	185	1873
Total Deaths in Nine Years	4,569	518	2,242	434	995	265	2,454	417	10,260	1,634	Total Deaths in Nine Years
Average No. of Deaths	507.7	57.6	249.1	48.2	110.6	29.4	272.7	46.3	1140.0	181.6	Average No. of Deaths
Percentage of Yearly Deaths	44.5	31.7	21.9	26.6	9.7	16.2	23.9	25.5	100.0	100.0	Percentage of Yearly Deaths

Diagram illustrative of the percentage Mortality of Bronchitis and Pneumonia in each quarter of the year in Dublin.



Curve of Percentage Mortality from Bronchitis

Curve of Percentage Mortality from Pneumonia —————

In order to test the variations between pneumonia and bronchitis as to seasonal fatality, it appeared desirable to refer to the statistics of deaths in a distant locality. We, accordingly, analysed the returns of deaths from the two diseases named in the Hospitals of Paris for seven years, commencing 1868 and ending 1874. The figures were found in a series of articles contained in *L'Union Médicale*, and entitled, "Constitution Médicale." We can here give merely the results in an abstract form. Of 100 deaths from

pneumonia in the Paris Hospitals, 31 occurred in the first, 28 in the second, 18 in the third, and 23 in the fourth quarter—the exact percentages being 30·8, 28·4, 18·3, and 22·5, respectively. Of 100 deaths from bronchitis, similarly, 35 took place in the first, 26 in the second, 13 in the third, and 26 in the fourth quarter—the exact percentages being 34·7, 25·8, 13·2, and 26·3, respectively.

As regards pneumonia, the close correspondence between Dublin and Paris is at once noticeable, and is still further shown by placing the figures in juxta-position, thus—

Dublin,	32	27	16	25.
Paris,	31	28	18	23.

As regards bronchitis, it is far less fatal, relatively, during the winter in Paris than in Dublin, only 35 per cent. of the deaths occurring during this season in Paris against 45 in Dublin.

In a subsequent part of this paper, we shall endeavour to prove that these remarkable differences between two affections—bronchitis and pneumonia, classed under the same heading, “Diseases of the Organs of Respiration”—do not depend exclusively on meteorological conditions; and, further, that the type of summer pneumonia is essentially different from that of winter pneumonia. The latter is what may be termed “pure” or “idiopathic pneumonia,” *peripneumonia vera*, *pneumonie franche*, *légitime*, as it is called by Trousseau.* Its symptoms and course are too well known to require special description at present.

II.—BIBLIOGRAPHY.

The type of pneumonia which prevailed so extensively in Dublin during the warm season of last year, and is so frequently encountered in late spring and summer, appears to be identical with that observed and described by Laennec as occurring among the conscripts of 1814. It is called by this author “Epidemic Pneumonia,” and he remarks that it is probably often due to deleterious miasms suspended in the air, which enter the circulation and operate particularly on the lungs.^b

The intimate relation of enteric fever and pneumonic affections affords additional evidence as to the pythogenic origin of many

* Clinique Médicale de l'Hôtel-Dieu de Paris. Deuxième édition. Tome Premier. P. 736.

^b De l'Auscultation Med. Cf. also Laennec on the Chest. Translated by Forbes. 1827. P. 220.

cases of inflammation of the lungs. Dr. Murchison* speaks expressly of the comparative frequency of pneumonic complications in enteric fever. He says:—"Pneumonia is more common in typhoid than in typhus. I noted it in 13 out of 100 cases, and Flint in 12 out of 73 cases." He adds:—"In rare cases it occurs early in the attack, and may be mistaken for the primary disease."

Ziemssen, of Berlin,^b to whom we are specially indebted for statistics of pneumonia, shows that the amount of the mean fluctuation in the mortality from this disease is in inverse ratio to the density of the population. If this be true, it would point to some disturbing element of the mortality existent in cities and not in the open country. This author further believes that the death-curves of pneumonia and *typhus* are remarkably parallel, and he concludes that "pneumonia will be most frequent when influences predisposing to diseases of the lungs combine with others which predispose to typhus, of which a remarkable example is afforded by the prevalence of almost double the previous mortality from pneumonia in Denmark and Ireland during the famine years, 1845-49, when typhus, dysentery, intermittents, and scurvy, raged.

According to the same author, "bad hygiene increases the amount of pneumonia, and so does imprisonment."^c In illustration of this statement reference may be made to the accounts of local epidemics lately recorded by various writers.

In the *Medical Times and Gazette*, April 4, and June 20, 1874, a remarkable outbreak of this form of lung disease, at East Sheen, London, is described under the title of "Sewer-gas Pneumonia." The *Irish Hospital Gazette*,^d November 1, 1874, contained the following abstract account of the outbreak in question:—

"Sewer-gas Pneumonia.—On Saturday, March 14, the parish sewer in the road exactly opposite a first-class boys' school at East Sheen, Mortlake, London, S.W., was opened by order of the Rural Sanitary Authority, for the purpose of inserting a ventilator protected by a charcoal screen. Mr. Waterfield, the head-master of the school, remonstrated, and backed up his own scientific objections

* The Continued Fevers of Great Britain. Second edition. 1873. P. 556.

^b On the Fluctuations in Frequency to which Pneumonia is liable, with special reference to those occurring during the two decimal periods, 1836, 1856. *Edin. Med. Journ.* Vol. IV., p. 380. 1858. [From the *Prager Vierteljahrschrift*. 1858. 2 Band.]

^c P. Niemeyer. *Schmidt's Jahrb.* Vol. CXIII., p. 337. Quoted in *Year-Book of Med. and Surg.* New Syd. Soc. 1862. P. 128.

^d Report on Public Health. By J. W. Moore, M.D.

by a certificate signed by several eminent medical men, including Sir W. Jenner, Bart., two of whose sons were students at the school. Sir W. Jenner especially mentioned the danger of pneumonia in connexion with the probable escape of sewer air in the vicinity of the school. The Sanitary Board persisted in carrying out their intention, with a trifling modification. On Friday, March 20, a high tide in the Thames blocked up the mouth of the sewer, and the compressed gases forced an opening through the ventilator. The rooms of the school facing the road were filled with a foul-smelling sewer air. Next morning a boy sleeping in one of these rooms was taken seriously ill with pneumonia; on the evening of the same day two other boys and two servants became similarly affected. One of the servants ultimately died. Mr. Waterfield at once broke up his school for the time being. In consequence of strong representations, the Sanitary Board removed the ventilator and closed the opening on the evening of the 21st, after which all smell ceased, and no additional cases of illness of any kind occurred in the house. As a rider to this instructive history, we have only to add that for fifteen years no illness attributable to drainage evils had occurred, and that two inspectors, sent down by the Local Government Board, pronounced the sanitary arrangements of the school-house to be excellent."

Dr. L. Dahl* describes an outbreak of pneumonia in the Akerhus Prison, Christiania. It commenced on December 18, 1866, and terminated in May, 1867. Among an average of 360 prisoners in that period, 62 cases occurred, of which 15 terminated fatally. The weather was very cold at the height of the epidemic, but the prisoners who worked indoors were about equally attacked with those who worked in the open air. Professor W. Boeck attributed the outbreak chiefly to *over-crowding*; and Dr. Dahl draws attention to the improved state of affairs coincident with a diminution of the number of prisoners from 387, on January 1, 1867, to 278, on December 31, 1867. A former similar outbreak in the prison occurred in 1847, and coincided with a prevalence of *scurvy*.

In a paper, entitled "My Experiences as to the Causes of Inflammation of the Lungs,"^b Thoresen, of Eidsvold (Norway), mentions the occurrence of several cases of croupous pneumonia near some glassworks, at a time when the disease was almost absent from the

* Norsk Mag. for Lægevidenskaben. Vol. XXII., p. 345. 1868.

^b Norsk Mag. for Lægevidenskaben. Third Series. Vol. I., p. 65. 1871.

town. The epidemic was confined to a single row of cottages, and lasted about a month—from July 19 to August 22, 1869, *when diarrhœa and cholérine* prevailed, both at the glassworks and in the neighbourhood—that is, during a “gastric epidemic constitution.”

Dr. Bryson* describes a very remarkable epidemic of pleuro pneumonia, in some ships of the Mediterranean Fleet, in 1860. The disease was of a low, asthenic type, accompanied with great congestion of the lungs, and in many cases, on board the ship chiefly affected—the St. Jean d'Acre—with *scorbutic symptoms*. Cachexia was marked, and *diarrhœal and dysenteric attacks* were common both in the early and in the later stages. The most tangible causes of the malady were *over-crowding* and most defective *ventilation*. There were good grounds for supposing that the affection was communicated by the sick landed from the attacked vessels to other patients in Malta Hospital. Dr. Bryson was able to trace several points of resemblance in the symptoms of this pleuro-pneumony to the lung disease in cattle.

The origin of pneumonia, in the instances just quoted, under conditions usually regarded as exciting causes of typhus (*over-crowding* and *defective ventilation*), and of enteric fever (*fecal miasm*), and the apparent *contagiousness* of the disease when it arises under such circumstances, seem to justify us in giving to this type of pulmonary inflammation the distinctive and etiological title—*Pythogenic Pneumonia*.

Dr. Buchanan has shown that a marked diminution of phthisis has, in many instances, followed the completion of measures for the improvement of the sanitary condition of towns. It is not improbable that this may, to some extent, depend on the lessened frequency of pneumonia, which is at present recognised as a direct cause of pulmonary consumption.

III.—CLINICAL DESCRIPTION OF PYTHOGENIC PNEUMONIA.

We shall now proceed to a clinical description of the affection under consideration, as illustrated by the following selected cases, which occurred under our care in Steevens' and Cork-street Hospitals during the summer of 1874.

CASE I. (Under the care of Dr. Grimshaw).—Henry S., aged seven, admitted into Steevens' Hospital on July 25th, 1874, from 41, Watling-street, close to the quay, near Victoria-bridge, three

* The Lancet. Jan. 9, 1864. See New Syd. Soc. Year-Book for 1864. P. 139.

days ill before admission. On admission the boy appeared to be dying; he was almost pulseless (after reaction the pulse rose to 132 per minute); congested face, cold extremities, and great difficulty of respiration, at the rate of 60 or 70 per minute; temperature on admission in the morning, 103.5° . Great pain was complained of over the lower part of the right side of the chest. The whole of this side was dull and painful on percussion; it was also dull in front, except a small portion of the upper part, as far down as half an inch below the clavicle. On auscultation but little respiration could be heard, and that bronchial in character. No crepitus was audible. There was a short, constant, dry cough, but no expectoration at any time during the course of the case. Two leeches were applied over the lower part of the right side of the chest, followed by poultices. Four ounces of wine were ordered, and a mixture, consisting of nitrate of potash, quinine, and nitric acid. In the evening the patient was much improved; temperature fell to 102° , and pulse to 120; the pain much less. The boy slept a little during the night. On the following morning his temperature fell to 101° , his pulse to 115. The next day he was almost convalescent. There was considerable respiration in the affected lung; the respiration increased daily, and, at the end of a week, there was no perceptible difference between the two sides.

CASE II.—Patrick C., aged forty, of 49, Francis-street, admitted into Cork-street Hospital, under the care of Dr. Grimshaw, on August 1st, 1874. Three days ill before admission. Temperature, 101.2° ; pulse, 108. Pneumonia of the whole of right and part of left lung. Got some wine immediately.

August 2nd (morning).—Temperature, 99.1° ; pulse, 120, very weak; fine crepitus over left side of chest posteriorly; dulness over both sides posteriorly, especially left; diminished respiration all over back; voice too weak to test vocal murmur; no expectoration; short cough; tongue heavily furred; bowels confined for several days. Ordered quinine, nitrate of potash, and nitric acid; wine, 8 $\frac{3}{4}$; whiskey, 6 $\frac{3}{4}$; turpentine enema, and poultices over chest. Evening temperature, 100.6° ; pulse, 108, varying to 130, very weak, compressible, and small; heart sounds very weak; great dyspnoea; enema had no effect; considerable flatulent distension of abdomen; passing water freely. Abdomen to be stuped with turpentine.

August 3rd (morning).—Temperature, 101° ; pulse too feeble to count; gradually sinking; had a bad night and was delirious;

wine, 12½; whiskey, 8½. Evening temperature, 102·8°; pulse, 114, very weak; tongue, dark brown fur.

August 4th.—Temperature, 97·4°; pulse extremely feeble; throwing arms about, picking bed-clothes; had some delirium all night; bowels moved naturally. Died at 1 30 p.m.

CASE III. (Under the care of Dr. Grimshaw).—Ann J. S., aged eight, from 12 Cork-street, admitted into Cork-street Hospital, August 4th, 1874. Three days ill before admission.

Was seen before admission by Dr. Grimshaw, when her temperature was 101°; pulse, 120, weak; flushed face; herpes on lips; tongue, white fur in centre, with red edges and tip, not well-marked.

August 5th.—Slight short cough. Left side of chest dull all over posteriorly; no crepitus audible; respiration much diminished; temperature, 101·8°; pulse, 120; tongue less furred. Ordered a mixture of quinine, nitrate of potash, and nitric acid; wine, 43; poultice over affected side.

August 6th.—Temperature, 100·8°; pulse, 114; dulness nearly gone, and respiration more distinct.

August 7th.—Temperature, 97°; pulse, 90; dulness gone; slight cough remaining; respiration healthy. Patient apparently convalescent.

CASE IV.—Edward D., aged forty years, labourer, from 41, Temple-bar, admitted into Cork-street Hospital on April 19th, 1874, five days ill before admission. Employed on the works for the reconstruction of Essex-bridge. Complained much of smell of river. Was employed chiefly on bed of river, and got wet on April 12, but did not complain of cold until he had a shivering fit on the 14th. He has had a cough since, but no expectoration.

20th.—Respiration, 36; pulse, 96; temperature, 102·2°; had slept badly; bowels moved five times, and discharge ochreous in colour; abdomen full and flatulent, but not tender. Dulness, fine crepitus, and increased vocal sounds in right clavicular and sub-clavicular regions, and upper part of back of same side, as far down as infra-scapular region; rusty expectoration. Ordered nitrate of potash, with tincture of opium; sinapism, to be followed by linseed poultices over affected part; wine, 6 ounces. On the following day the patient was better, and he continued to improve until the 25th; the diarrhoea ceased after the 20th, and the discharges were of a

normal character. There were no symptoms of enteric fever except the ochreous stools for the single day. At the time this patient was in hospital, a fellow-labourer of his was suffering in an adjoining bed from well-marked enteric fever, which he considered was caused by his falling into the river, at Essex-bridge, about a fortnight before his admission.

CASE V.—Thomas H., aged fifty-two, a locksmith, residing at 5, Engine-alley, was admitted into Cork-street (Fever) Hospital, May 4, 1874, under the care of Dr. J. W. Moore. He had been suffering from pneumonia for nine days.

May 5th.—Pulse, 112 ; respiration, 36 ; temperature, 101·0°. *Chest.*—Anteriorly, want of resiliency on right side, partial dulness on percussion, puerile respiration throughout left lung ; posteriorly, absolute and tympanitic dulness over right side, bronchophony, pneumonic crepitus—left side partially dull at base, and fine crepitus. Sputa tenacious and slightly tinged with blood. He was put on quinine and digitalis, 4 ounces of wine, and extra beef-tea. Sinapisms and poultices were ordered to the chest.

May 6th.—Pulse, 88 ; respiration, 30 ; temperature, 100·3°. Tongue moist and clean at edge. Slept badly. Physical signs unchanged anteriorly. Posteriorly, a well-marked, fine crepitus was now audible below the right scapula.

May 7th.—Pulse, 90 ; respiration, 34 ; temperature, 99·4°. Tongue fissured and dry in centre. Physical signs scarcely altered. Crepitus well marked on right side.

May 8th.—Pulse, 106 ; respiration, 40 ; temperature, 99·1°. Bronchophony, tubular breathing, and dulness very well marked on right side ; heart rather weak ; whiskey, 6 ounces, was substituted for the wine.

May 9th.—Pulse, 104 ; respiration, 36 ; temperature, 99·5°. Tongue cleaner.

May 10th.—Pulse, 110 ; respiration, 32 ; temperature, 98·9°. Tongue cleaner. Tympanitic dulness under right scapula, and exquisitely-marked tubular breathing ; partial dulness left side and distant respiration. Whiskey, 4 ounces.

May 11th.—Pulse, 96 ; respiration, 32 ; temperature, 98·9°. Large crepitus setting in on left side ; right side to be painted with iodine.

May 12th.—Pulse, 104 ; respiration, 36 ; temperature, 99·9°. No evidence of resolution ; slight diarrhoea. Whiskey, 6 ounces.

To have $\frac{1}{2}$ th grain of tartar-emetic with quinine every fourth hour.

May 13th.—Pulse, 100; respiration, 36; temperature, 98·9°. No signs of resolution as yet. Has had only three doses of the tartar-emetic; expectoration more frothy.

May 14th.—Pulse 96; respiration, 36; temperature, 98·9°. Bowels moved nine times. Had three doses of the tartar-emetic.

May 15th.—Pulse, 98; respiration, 36; temperature, 101·2°. Tongue dry and fissured. He *had slight shivering early this morning*. Bowels moved five times.

May 16th.—Pulse, 94; respiration, 32; temperature, 99·2°. Tongue cleaner and moister. Bowels moved three times. No clearing of right lung as yet. Tubular breathing exquisitely marked.

May 17th.—Pulse, 94; respiration, 34; temperature, 98·0°.

May 18th.—Pulse, 88; respiration, 32; temperature, 98·3°. Tongue cleaning. Crepitus redux intermixed with tubular breathing at level of lower edge of right scapula.

May 19th.—Pulse, 96; respiration, 30; temperature, 98·0°.

May 20th.—Pulse, 96; respiration, 30; temperature, 98·4°. No additional evidence of resolution. Ordered iodide of potassium and quinine in bark, and to be dry-cupped over right lung. In a few days complete resolution took place, and he was speedily well.

The clinical aspects of the foregoing cases at once exhibit a material difference from "simple legitimate pneumonia." The disease does not follow the regular stages of pneumonic inflammation. In many cases it seems to be arrested in its first or congestive stage, as in Cases I. and II., and may then be considered more as a congestion than as an inflammation of the lung. It is probable that many of the deaths from so-called "congestion of the lungs," or "fever with congestion of the lungs," which we so often hear of, are similar to Case II. Its close relationship to enteric fever in its origin has been already pointed out, and this relationship is further confirmed by Case IV. and similar ones, and also by the frequency with which enteric fever is complicated by pneumonia. Two cases recently in Steevens' Hospital also illustrate this point. The patients were two stable-men, residing in the out-offices of a nobleman's house in the county of Dublin, where enteric fever had prevailed on a former occasion. The men on admission presented many symptoms of enteric fever; they both

had the characteristic appearance of the tongue; one had one rose spot on his abdomen; both had pain on pressure, but no gurgling in the right iliac region; neither had diarrhoea, and when the bowels were moved by slight doses of castor-oil, the discharges presented no abnormal appearance. Each of these patients had pneumonia of the base of his right lung; the extent of the pneumonia was exactly the same in both cases; the symptoms developed themselves synchronously in the two patients, and were exactly the same as in Case IV.

The invasion of the disease is sudden, the patient getting a rigor, without having experienced any previous *malaise*; this is generally succeeded on the following day by pain in the side and shortness of breath. The seat of the pain is not so proportionally frequent over the base of the right lung as in "simple pneumonia," and pain is often completely absent, probably owing to the comparative rarity of pleuritic complications. The patient usually first comes under the notice of the physician between the third and sixth day of the disease, at which period he will generally be found to have a portion of his lung consolidated; his pulse from 120 to 140, extremely soft and compressible; respiration from 40 to 60; and temperature from 102° to 105° Fahr. He complains of great debility and thirst, has almost constant short teasing cough, without any, or with scanty expectoration. The physical signs during this period are those of ordinary pneumonia in its first stage. At this stage the disease may suddenly subside, and the patient become decidedly better in the course of 24 hours. Convalescence may be almost completely established within a week. The severer cases, however, follow more nearly the course of true pneumonia, as in Case V., where all the symptoms of true pneumonia were developed, but not with the regularity which usually attends the course of that disease. In that instance a tendency to *relapse* was observable. On the other hand, the affection may as suddenly become worse, and the patient die within the first week. When fatal, death usually occurs before any attempt at resolution of the affected lung takes place.

The disease is not usually very fatal; the number of cases which have come under our notice, and the difficulty in accurately separating some of them from enteric fever on the one hand, and from pneumonia on the other, makes it impossible to arrive at an accurate estimate of the percentage mortality.

In only one instance had we an opportunity of making a *post-mortem* examination; this was in a case at Steevens' Hospital,

which proved fatal before resolution had been attempted, and, in this case, the diseased organs presented the same appearances as in ordinary pneumonia at the same stage. The points of difference in the clinical history of this disease from true pneumonia appear to be its extremely sudden invasion, the frequency with which the disease is arrested in its early stage, and its being less liable *constantly* to attack the lower lobe of the right lung.

Treatment.—In many of the milder cases the treatment was purely of the expectant character, and some slight *placebo* was administered; but this leaving of the disease to itself, even in its milder forms, does not seem to be an advisable course. We believe that early treatment has the effect of shortening the malady and adding much to the effectual convalescence of the patient. The drug which singly we have found of most value has been quinine, given in considerable doses, the usual amount prescribed being 5 grains every third hour, and we have not met with any disagreeable consequences from this or even larger doses. The largest dose of quinine administered by us has been 10 grains. The form usually adopted has been—

R.—Nitrate of potash	.	.	grs. 120.
Sulphate of quinine	.	.	grs. 40.
Dilute nitric acid	.	.	ʒij.
Water	.	.	to ʒviij.

Take 1 ounce every third hour.

In cases where there was much depression, alcoholic stimulants or turpentine have been employed with manifest benefit. To relieve pain in the affected part, poultices have been successfully employed, almost without intermission, and, where counter-irritation was deemed necessary, sinapisms preceded the use of the linseed cataplasms. In cases of intense pain in the affected side, from two to four leeches usually gave relief. On no occasion were blisters employed during the acute stages of the disease. The treatment of this disease requires much careful consideration, as our experience leads us to believe that it is much more amenable to treatment than the other forms of pneumonia.

IV.—METEOROLOGICAL AND EPIDEMIC CONDITIONS OF 1874.

We have now, in the last place, to investigate the circumstances under which pneumonia prevailed so largely in Dublin during 1874. In the 9 years ending 1873 the average annual number of

deaths from the disease, in the Dublin registration district, was 182, in 1874 the number of deaths was 206. The average quarterly number of deaths was 58 for the first, 48 for the second, 30 for the third, and 46 for the fourth quarter. The corresponding numbers for 1874 were 48, 55, 43, and 60, respectively. So that pneumonia was *less* fatal than usual in Dublin during the first quarter of 1874, but much more fatal than usual in the remaining 9 months of that year, the excess being greatest in the third quarter—*i.e.*, from July to September. Exactly the same results are brought out by an examination of the admissions into Cork-street (Fever) Hospital, as given in Table II.

TABLE II.—*Showing the Monthly Admissions into Cork-street (Fever) Hospital of Patients suffering from Pneumonia, and the Meteorological Conditions in 1874.*

Month	ADMISSIONS			METEOROLOGICAL DATA, 1874			
	Average 1869-73	1874	Above or Below Average	Mean Temp.	Rainfall	Rainy Days	Humidity
January - -	3.0	0	—	42.8	2.019	14	88.6
February - -	4.1	2	—	41.6	2.683	12	80.4
March - -	4.4	3	—	45.8	.953	12	75.6
April - -	3.6	7	+	49.2	1.315	16	72.5
May - -	4.0	9	+	49.8	1.747	14	74.8
June - -	4.8	10	+	56.6	.405	9	66.9
July - -	2.8	11	+	60.6	2.515	19	71.0
August - -	2.2	4	+	58.0	4.946	18	77.2
September -	3.0	8	+	54.9	1.709	18	78.7
October - -	2.2	3	+	49.5	2.508	22	79.7
November -	3.6	6	+	45.8	3.179	19	85.7
December -	2.2	5	+	36.1	3.207	18	87.6
Totals and Averages }	39.9	68	+	49.2	27.186	186	77.8

The number of cases of pneumonia admitted during April, May, June, August, and December, was about double the average

admissions for the previous 5 years for those months; and in July nearly *four times* the average number of cases were admitted, a considerable excess being also observed in October and November. For the whole year 1874 the admissions were 70 per cent. in excess of the average.

The meteorological data which require examination as possibly influencing the prevalence of pneumonia, are:—(1.) *Temperature*, (2.) *Humidity*, and (3.) *Rainfall*.

TABLE III.—*Showing the Deaths from Pneumonia and Enteric Fever in Dublin, and the Meteorological Conditions, in 13 periods of 4 weeks.*

1 No. of Period	Deaths from Pneumonia		Deaths from Enteric Fever		Mean Temp.		Rainfall		Humidity	
	2	3	4	5	6	7	8	9	10	11
	Average 1865-73	1874	Average 1869-73	1874	1865-73	1874	1865-73	1874	1865-73	1874
I.	17.2	10.0	14.2	15.0	39.7	42.7	2.276	1.259	85.8	83.2
II.	16.9	11.0	12.0	17.0	42.6	41.6	1.795	2.683	83.3	80.5
III.	17.6	22.0	10.6	18.0	41.8	45.5	2.250	.702	81.5	76.9
IV.	19.9	19.0	11.8	17.0	47.3	47.8	1.621	1.566	79.7	73.3
V.	15.6	16.0	13.4	14.0	49.6	49.4	1.949	.991	76.1	72.5
VI.	14.2	19.0	10.6	12.0	54.6	56.0	1.642	.823	75.2	70.7
VII.	10.5	13.0	11.2	9.0	59.6	60.1	1.662	.896	74.9	68.6
VIII.	8.4	11.0	8.0	16.0	60.2	58.0	2.286	5.504	76.1	74.8
IX.	8.1	11.0	11.0	8.0	58.5	57.2	2.422	2.220	77.6	78.3
X.	10.2	14.0	8.2	12.0	54.1	52.3	2.016	1.683	81.2	78.9
XI.	12.2	15.0	12.8	18.0	48.0	50.1	2.452	2.204	83.6	80.6
XII.	14.5	19.0	12.4	23.0	43.0	48.5	1.869	3.313	84.7	86.1
XIII.	16.1	26.0	14.2	10.0	42.5	36.1	2.294	2.814	85.7	87.2
Totals	181.4	206.0	150.4	189.0	—	—	26.534	26.658	—	—
Averages	14.0	15.8	11.6	14.5	49.3	49.6	2.041	2.051	80.4	77.8

(1.) *Temperature*.—In Table III. the year has been divided into thirteen periods of *four weeks* each. Columns 6 and 7 contain the mean temperature values for 9 years, and for 1874. The first period of 1874 was 3°, and the third period 3.5°, warmer than the

average; a rather cold period intervening in February. From March the mean temperature was rather above the average until the eighth period (in July and August), when a deficit of 2° is observed. This lower temperature lasted through September and the first part of October, being in its turn succeeded by an excess of temperature, which finally gave way to great and persistent cold at the beginning of December. Unfortunately for statistical purposes, the registration of deaths at the beginning of 1874 was more than usually irregular. It is quite possible, therefore, that some of the 22 deaths from pneumonia, entered in the third period, belonged, strictly speaking, to periods 1 and 2. However, the very mild weather in January does seem to have lessened the pneumonic mortality, while the tendency to increase coincides with the lower temperature in February. Periods 4 and 5 are interesting as showing a correlation between temperature and the fatality of the disease. But temperature *alone* altogether fails to explain the remarkable rise in the death-rate above the average which characterises the sixth and following periods—at least with the exception of period 13, when an exceedingly low temperature and high mortality are coincident.

(2.) *Humidity*.—Column 11 exhibits a remarkable diminution of the percentage humidity in the first 8 periods of 1874, the deficiency being greatest in periods 3 (4.6 per cent.), 4 (6.4 per cent.), 6 (4.5 per cent.), and 7 (6.3 per cent.). During the former two periods, pneumonia was very fatal; during the latter two, its mortality far exceeded the average. The last 8 weeks of 1874 were much damper than usual, yet pneumonia was extremely fatal.

(3.) *Rainfall*.—As might be supposed, this factor discovers a parallelism to humidity, the rule being for a lessened rainfall and a low humidity to happen simultaneously. Now although the rainfall of 1874 exceeded the average, it was by no means a wet year. In fact, as regards the first seven months, it was a year of drought, rain having fallen on only 85 out of 201 days up to July 20th. In June only *four-tenths* of an inch of rain fell, bright skies and hot suns prevailing until the 22nd. From January 1st to June 30th the rainfall measured 9.122 inches, or at the rate of about 18 inches a year, and this small amount included one fall of *an inch and a half* on February 25th. If this excessive fall is deducted, we have only $7\frac{1}{2}$ inches as the product of six months. It is curious that of the 11 cases of pneumonia admitted into Cork-street

Hospital during July, 8 were admitted *before* the 14th. Of 2·515 inches of rain registered in that month, ·458 fell up to the 20th, the balance, more than 2 inches, on 10 out of the remaining 11 days. In the week ending August 15th, 2·966 (almost 3 inches) of rain fell on 7 days at Fitzwilliam-square, Dublin. Of this large quantity 2·582 inches fell during the passage of a *bourrasque* on the 13th, an amount equal to 20·6 per cent. of the total rainfall from January 1st to August 12th, 1874. In the 5 weeks ending August 29th (thus including two periods of heavy and frequent rainfall), 12 deaths from pneumonia were registered in Dublin. In the next 5 weeks 21 deaths were registered. In the former period rain fell to the amount of 4·673 inches on 21 days; in the latter, to the amount of 2·016 inches on 13 days.

It would seem, from these considerations, that the prevalence of pneumonia is more or less influenced by temperature, humidity, and rainfall. A low temperature predisposes to the disease; so do a low humidity and a scanty rainfall. Where these three conditions co-exist, pneumonia prevails most. Dr. Sturges has shown with truth that "cold does not necessarily affect the pneumonia rate, but always and markedly the bronchitis rate." He also says that "any considerable amount of wet has a tendency to heighten the bronchitis rate, but has no such tendency as regards the pneumonia rate—the *very lowest numbers of this latter, out of 10 years, being found to follow weeks of excessive rain.*" He further quotes Dr. Morehead,^b to prove that during the rains of the monsoon in India, pneumonia shows a remarkable decrease.

Lastly, Dr. Sturges very clearly demonstrates the coincidence of strong dry winds and an increase of the disease—the moist S.W. winds of all seasons tending to check it, the dry N.E. winds acting as an exciting cause of it.

All this is satisfactory as agreeing with our observations in Dublin. But the question still remains unsolved—"Why does a warm dry air increase pneumonia?" We have little hesitation in answering—"Because the *pythogenic* type of the disease depends on that pollution of the air by miasmata, which is greatest in warm dry weather." When, therefore, we have pythogenic pneumonia superadded to a considerable prevalence of ordinary pneumonia, dependent on the irritating dry air so characteristic of the easterly winds of late spring, and on the rapid and extreme changes of

^a *Loc. cit.* Pp. 139, 140, 141.

^b *The Diseases of India.* Vol. II., p. 308, *et seq.*

temperature in that season, the unusual frequency of the disease in the summer of 1874 no longer surprises us.

After the heavy downpour of February 25th, in that year, no rainfall of half an inch occurred until May 28th, and almost *two months* then elapsed until (on July 22nd) another fall of that amount took place. What was the consequence? The rivers were nearly all dried up; even perennial springs failed in many instances. A comparatively scanty quantity of water flowed through the sewers of Dublin, which remained unflushed for months; and the bed of the Liffey became such an intolerable nuisance, under the combined influence of the drought and hot sun, that, from his Grace the Lord Lieutenant down, the inhabitants of the city murmured. Ashpits, whether cleansed or not by the Public Health Committee, contributed their quota to the nuisance; and, in fine, the air reeked with miasm. Of the five patients whose cases illustrate this paper, one was admitted from Watling-street, close to the Liffey, and a well-known fever locality; one from Temple-bar, also close to the river; one from 5, Engine-alley, a place totally unfit for habitation; one from 12, Cork-street, with a choked drain running close to the back-windows; and one from 49, Francis-street, perhaps the unhealthiest street in Dublin.*

In connexion with this question, it is instructive to note that enteric fever exceeded the average in Dublin last year to a considerable amount. Columns 4 and 5 of Table III. give the precise figures. The excess was greatest in January and February, and in late autumn; and on this disease also the heavy rainfall in the middle of August seemed to have a controlling effect—the deaths in the 9th four-week period being only half those in the previous four weeks. It is true that dysentery and diarrhœa were not so fatal as usual in 1874—the deaths being 13 and 203, respectively, against an average of 24 and 278 in the previous 10 years; but this is accounted for by the heavy rains of the end of July and middle of August, which occurred just at the time when these affections are commonly most prevalent. In 1868, the year of the very hot and dry summer, diarrhœa raged like a plague in August and the beginning of September. Of all the pneumonia deaths that year, 31·3 per cent. took place in the first, 28·9 in the second, 15·1 in the third, and 24·7 in the fourth quarter. This shows less

* In the Appendix will be found some excerpts from the Weekly Reports of the Dublin Sanitary Association, which fairly illustrate the conditions under which pythogenic pneumonia arises.

than the average prevalence of pneumonia in the summer season—probably there was much less *ordinary* pneumonia than usual, owing to the extreme warmth. In 1866, the cholera year, pneumonia was very prevalent in Dublin, 197 deaths having been caused by it. The seasonal percentages of mortality were 33·0, 26·4, 22·3, 18·3, respectively—a very large excess in the third quarter ushering in the epidemic of cholera. The deaths numbered 65, 52, 44, 36, in each quarter. Again, these facts confirm Dr. Sturges' words. He writes:—"At the worst of the epidemic [of cholera in London in 1866], we have pneumonia showing a higher mortality than bronchitis, both being above the average. A similar phenomenon is observable in other cholera years, and especially in 1849. On the other hand, in the year 1859, *with a severe epidemic of diarrhœa, but with very little cholera, there is an almost unprecedented fall in pneumonia*, in which bronchitis does not share." The decrease of pneumonia in 1859 depended, in this author's opinion, on the frequency of south-westerly winds in the summer of that year. The same explanation would apply to the summer of 1868 in Dublin. Certain it is that bronchitis prevails most in *damp*, cold weather, while a *dry* air has even more influence in producing pneumonia than mere lowness of temperature. Hence it is that bronchitis is more prevalent and fatal during winter in the British Islands than abroad, where pneumonia is much more frequently observed than it is in these countries.

V.—RECAPITULATION.

The foregoing considerations seem to warrant us in drawing the following conclusions:—

1. That the bibliography of pneumonia indicates the existence of a form of the disease which arises under miasmatic influences, and is contagious.

2. That this view is supported by the relations which exist between this form of pneumonia and certain zymotic affections—notably, enteric fever and cholera—and by the resemblance between it and epizoötic pleuro-pneumonia.

3. That its etiology justifies us in regarding it as a zymotic affection, and in naming it "*pythogenic pneumonia*."

4. That pythogenic pneumonia presents peculiar clinical features, which enable us to distinguish it from ordinary pneumonia.

5. That much of the pneumonia which prevailed in Dublin during 1874 was of this pythogenic character.

6. That, whereas ordinary pneumonia is specially prevalent during a continuance of cold, dry weather with high winds, and extreme variations in temperature, pythogenic pneumonia reaches its maximum during tolerably warm weather, accompanied with a dry air, deficient rainfall, hot sun, and rapid evaporation.

APPENDIX,

Containing Excerpts from the Nuisance Report Books of the Dublin Sanitary Association.

- I.—No. in Nuisance Book, 35. 12, *Cork-street*.—Choked drain at rere; passage saturated with dirt. *Inspected* August 6th, 1874. *Reported* August 6th, 1874. *Result* (of Report to Public Health Committee of the Corporation).—"No cause for complaint." *Observations*.—A case of pneumonia lately admitted to hospital from this house.
- II.—No. in Nuisance Book, 43. 39, *Coombe*.—Filthy passage, back-yard, and privy; drainage runs in at back door. *Inspected* August 6th, 1874. *Reported* August 6th, 1874. *Result*.—"No cause for complaint." *Observations*.—A fatal case of pneumonia contracted here.
- III.—No. in Nuisance Book, 41. 5, *Engine-alley*.—These premises consist of a house and three cottages in the rere; they are filthy and dilapidated. Filthy privy at rere. *Inspected* August 6th, 1874. *Reported* August 6th, 1874. *Result*.—"Acted on since receipt of complaint." *Observations*.—All these tenements are unfit for habitation.
- IV.—No. in Nuisance Book, 45. 16, *Skinner's-alley*.—Extremely filthy in every way; the house unfit for human habitation; yard, privy, and ash-pit filthy. *Inspected* August 6th, 1874. *Reported* August 6th, 1874. *Result*.—"Acted on since receipt of complaint." *Observations*.—A man admitted to Cork-street Hospital with miasmatic pneumonia, on July 13th, 1874.
- V.—No. in Nuisance Book, 47. 8, *Newmarket*.—House in bad repair; a filthy cellar; no back-yard, but the yard of next house is used by the occupants of this. In this yard is a filthy privy and ashpit. The ruins of No. 9 are used as a dust-hole. *Inspected* August 6th, 1874. *Reported* August 6th, 1874. *Result*.—"No cause for complaint." *Observations*.—A man admitted to Cork-street Hospital with miasmatic pneumonia from this house on July 4th, 1874.

- VI.—No. in Nuisance Book (old), 377. *Temple-bar*.—Filthy yards in several of these houses, through which bad smells prevail. *Inspected* July 25th, 1873. *Reported* July 25th, 1873. *Result*.—"Acted on before receipt of complaint."
- VII.—No. in Nuisance Book (old) 472. *Temple-bar*.—House-slops of the most offensive kind thrown on road-way. *Inspected* November 22nd, 1873. *Reported* November 24th, 1873. *Result*.—"Attended to since receipt of complaint."
- VIII.—41 and 42 *Temple-bar*.—*Reported* April 18th, 1873, for having ash-pits and privies in both houses. *Result*.—"Acted on since receipt of complaint."

ART. XX.—*A Tumour: what was it?* By JOHN KING MACONCHY, M.B., Dubl.; F.R.C.S.I.; Surgeon, Co. Down Infirmary.

H., ADMITTED to the Co. Down Infirmary 10th November, 1874, a spare, muscular man, of about fifty, of not very temperate habits, presenting the usual signs of dislocation of the shoulder, the head of the humerus plainly to be felt about one inch below the anterior concavity of the clavicle. The accident was the result of a fall downstairs fourteen days previous to his admission to the infirmary, where he arrived in the evening. Finding that I could not replace the humerus by my unaided efforts with the heel in the axilla, I allowed the patient to rest till the morning, when I had the assistance of Messrs. Nelson, Hetherington, and Lawder. Chloroform having produced not only anæsthesia, but muscular relaxation, there was still some difficulty; the reduction was, however, effected by the heel in the axilla, traction being made from both wrist and elbow, when the head of the bone glided without noise into the glenoid cavity. While handling the joint to ascertain that the reduction was complete, the dislocation recurred, but was reduced this second time with the greatest ease. In applying the usual pad and bandage, he was put in the sitting position before the effects of the chloroform had sufficiently passed off, and syncope became imminent. At this time a large tumour was first seen occupying the region of the latissimus dorsi, extending from the posterior fold of the axilla nearly to the crest of the ilium, 13×7 inches, having about 2 or $2\frac{1}{2}$ inches of prominence, moderately tense, elastic, with a well-defined outline, giving a feeling like fluctuation.

The faintness suggested the rupture of an artery, but the radial pulse and rapid recovery of the patient seemed to me to negative this idea. Our next supposition was that we had failed to observe a large fatty tumour (this I mention as the best description I can give of its pseudo-fluctuating feel). No such thing, however, had existed. A mark made at the lowest point, after a little time, satisfied us that it was not extending; manipulation or pressure caused no pain; there was no crepitation, no discoloration; the note on percussion was not clear, nor was there any pitting on pressure. It is to be regretted that we did not explore it at the time, but we thought the subsequent course of the case would throw light on its nature. In this, however, we were disappointed, as that evening there was not a vestige of our large tumour.

As to what its contents were, it seems to me easier to find objections to, than reasons in support of, any hypothesis.

That it was a false aneurism seems to be negatived by the rapid recovery of the patient from the fainting state and the speedy disappearance of the tumour; even a circumscribed effusion of serum could hardly be produced so quickly or absorbed in the time; besides, it did not pit. If it was an emphysema, why did it not crepitate; a broken rib may escape notice, but the crackling of a cellular emphysema, when subjected to continued and heavy handling, could not do so.

In referring to such surgical books as I can command here, I found nothing at all similar to this occurrence in any of them; the only cases which have even an apparent resemblance are cases narrated by Desault, and referred to by both Boyer and Dupuytren, in which tumefaction occurred suddenly in the pectoral region during the reduction of dislocation of the shoulder. They were stated by Desault to be emphysematous; they differ in some particulars, however, from this case. They were in the pectoral region, and extended into the axilla; this one was in the back, and did not extend into the axilla.

The note on percussion in his cases indicated the presence of air; in this case it was not clear.

In his cases the tumours disappeared under the use of evaporating lotion and pressure in 12 or 14 days; in this case all swelling had gone in fewer hours. Subsequently there was little to remark; the seat of the tumour never became discoloured, though some blackness occurred, first in the upper gluteal region, gradually, during some days, spreading to the lower gluteal region, like the

halo of discoloration round a bruise. On the 24th of last December I mentioned this case to the late Mr. R. Adams, and had a long conversation with him on the subject of untoward accidents occurring in the reduction of shoulder dislocations; he could not at the time remember any case similar to the one in hand. A few days after my return home, I received a note from him requesting me not to publish the case till I heard from him again, as he had some observations to make which I might use as I saw fit.

Had these observations ever reached me they would have been published before this, as in him the medical profession has lost a member whose remarkable accuracy of observation, and perfect truthfulness of narration, entitled him to have every statement he made received with confidence, and every opinion he advanced considered with respect.

The above case is submitted to the readers of the *Dublin Journal of Medical Science*, in the hope that some of them may be able to throw light on what is certainly not a common occurrence.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON DISEASES OF THE SKIN.

On Diseases of the Skin, including the Exanthemata. By FERDINAND HEBRA, M.D., and MORIZ KAPOSI, M.D. Vols. III., IV. Translated and edited by WARREN TAY, F.R.C.S. The New Sydenham Society, London. 1874 and 1875.

WE must apologise for an unavoidable delay in noticing the third portion of Hebra's great work, which has been in the hands of the profession for some time past. In the present volume three classes of Hebra's arrangement are discussed—viz., Class VI. Hypertrophie Cutaneæ; Class VII. Atrophie Cutaneæ; and Class VIII. Benign New Growths, Div. I. and II.

With the exception of the first 67 pages, the rest of the work is from the competent pen of Dr. Kaposi, who has also revised the proof-sheets of the translation, and made various additions and alterations. Mr. Tay seems to have executed his difficult task with skill, and he has, moreover, enriched the text with some valuable notes. We may instance, in particular, the section on Xanthoma, where the investigations of Hutchinson, H. Fagge, W. Legg, Moxon, and Pye-Smith, on this curious affection, are succinctly introduced.

On the often-controverted question of the possibility of the hair suddenly turning grey, Kaposi pronounces himself decidedly against it, declares that no incontestable scientific support for such a phenomenon has been brought forward from any quarter, and believes that he is justified in advancing the following propositions which are founded on the results of physiologico-anatomical investigations:—

“1. The hairs can only turn grey from their roots upwards, that is, from their papillæ, and, therefore, grow deprived of pigment.

“2. The hairs can only turn grey within the space of time which is required for their physiological growth; consequently, they must become grey from below upwards and gradually.”

The chapter on new growths is preceded by some apposite general remarks on the relation of modern histology to the clinical phenomena attending neoplasma, which are described according to the following arrangement:—

“BENIGN GROWTHS.

- “I. Growths made up of connective tissue:—
Keloid—Scars—Molluscum fibrosum—Xanthoma.
- “II. Growths made up of vessels:—
Angioma; growths consisting of blood-vessels.
Lymphangioma; tumour composed of lymphatics.
- “III. Growths made up of cells:—
Rhino-scleroma—Lupus erythematodes—Lupus vulgaris.

MALIGNANT GROWTHS.

“Lepra—Carcinoma—Sarcoma melanodes.”

The fourth volume, which is wholly written by Kaposi, is occupied with the consideration of the remaining classes of New Growths. The first chapter is devoted to a peculiar nodular disease of the nose, which was described for the first time, in 1870, by Hebra and Kaposi; and although up to this date these authors have seen in all 15 cases, we are not aware that the disease has yet been recognised in English practice.

Considerable difficulty attends its diagnosis from syphilitic nodules, keloid, and epithelioma, and the only plans of treatment attended with success are excision, and the destruction of the new growth by means of caustics. The article on Lupus is very full, and the discussion of the principles and various methods is elaborately worked out. For several reasons, nitrate of silver, in stick, is regarded as the remedy, *par excellence*, in the treatment of lupus, but we fancy that it does not require a wide experience to endorse the aptness of the following remarks:—“In truth, the treatment of lupus is by no means easy. A mere mnemonical acquaintance with the numerous remedies and plans of treatment enumerated, is not sufficient to enable us to cope with so obstinate a malady. A physician must have a large experience, and exercise professional and natural judgment, in order to be able to choose the right remedy at the right moment, and to proceed cautiously at one time, and act energetically at another.”

The entire work is admirable for its lucidity of arrangement, its simplification of confused and intricate subjects, and, not least, for

the avoidance of those pedantic and repelling terms which a celebrated dermatologist has grandiloquently styled the "terminological innovations of modern nomenclators."

Lectures on Skin Diseases, delivered at St. Vincent's Hospital. By E. D. MAPOTHER, M.D. With illustrations. Second edition. Fannin & Co. 1875. Pp. 214.

THESE Lectures are unpretentious in size and scope, and the author confines himself chiefly to brief practical remarks upon the etiology and treatment of the more common affections of the skin. In one or two cases he details his own views on the pathology of certain diseases—*e.g.*, erysipelas and eczema—and he adduces arguments in support of the position that the poison of gout is the cause of eczema. He wisely avoids confusing students by the use of lengthy words and fine sub-divisions of generic terms, and groups the diseases he treats of under the heads of acute effusive diseases, chronic effusive diseases, scaly diseases, diseases of the capillaries, and specific diseases.

On the literary execution and arrangement of the book we need not be hypercritical, but it is our duty to point out some of the blemishes and inaccuracies which at once catch the eye on glancing over the pages, and which should not have been allowed to intrude into a second edition.

Thus, creasote is only an impure form of carbolic acid (p. 17); oil of cadium [cade.] (p. 30). Speaking of scabies (p. 23) "in children, and in ill-fed delicate people, the acari multiply most, and the same may be said of all zymotic diseases." Does he mean to imply that scabies is a zymotic disease? Sycosis (*σύνων*, a fig), so termed from its seedy (*sic*) appearance (p. 30). Eczema, he states, is derived from *ἐκζέω*, I pour over (p. 68); and in the treatment of it, it is mentioned that lotions of sulphuret of potassium would act by the evolution of sulphurous (!) acid (p. 91). Psoriasis never appears on the palms or soles (p. 108). At p. 120 a suggestion is thrown out that pityriasis rubra may be the same disease as pemphigus foliaceus, a supposition possible only to one who had not seen these two affections. We do not care to extend the list, but we cannot forbear commenting on a ludicrous *faux pas* which occurs at p. 20. In the section on scabies, Dr. Mapother gives a sketch of the acarus burrow, which, he states, is "figured after Milbengang."

Now, this engraving, which struck us as an old friend, is plainly a reduced copy of the figure in Dr. Tilbury Fox's work, third edition, p. 417, which is taken from Neumann with acknowledgment. On turning to Neumann's *Lehrbuch der Hautkrankheiten*, 3^{te} Aufl. p. 496, we meet with the original drawing from which Dr. Fox's and Dr. Mapother's illustration was copied. At the foot of the engraving is this inscription, "Eierlegende Milbe (Milbengang)," and, in the text on the same page, "Diesen Raum, welchen die weibliche Milbe während ihres weiteren Vordringens geschaffen, nennt man Milbengang."

A Treatise on Cutaneous Medicine and Diseases of the Skin. By H. S. PURDON, M.D. London: Baillière, Tindall, & Cox. Belfast: M'Cracken and Mogeys. 1875. Pp. 272.

DR. PURDON, from nine years' experience at the Belfast Hospital for Skin Diseases, has had abundant opportunities of watching the course and studying the treatment of cutaneous affections, and he has been a frequent contributor of papers on dermatology to various medical journals. In the present volume, which evidences considerable reading, he has condensed and brought together in a convenient form the views of the best authorities, and the directions for treatment are conveyed in a practical manner.

The use of iodoform has of late attracted some attention, and we may here mention a case in which Dr. Purdon employed it locally with the best effects.

A poor woman, aged fifty years, suffered from an obstinate ulcer on the left leg. It was inflamed, irritable, and so extremely painful that sleep was much disturbed. Various remedies were applied without the least benefit. At last iodoform was thought of, and an ointment was prescribed, containing one drachm of iodoform and a few drops of rectified spirit to the ounce of lard. After a few applications the pain entirely ceased, healthy granulations began to spring up, the ulcer assumed a clean appearance, and rapidly healed.

In the event of another edition being called for, we would suggest to the author the advantage of adding a good index, the want of which is the more felt inasmuch as no classification is adopted, and the chapters seem to follow each other at random. It is evident also that little care was bestowed upon "reading" the proofs, and the typographical errors are unusually numerous.

A Practical Treatise upon Eczema, including its lichenous and impetiginous forms. By DR. M'CALL ANDERSON. Third Edition, with Illustrations. London: J. & A. Churchill. 1874.

DR. ANDERSON'S books are pleasant to read, for they are clearly arranged, well written, and tastefully brought out. The present volume constitutes no exception; it has been carefully revised, and forms a handy and reliable guide to the knowledge and management of a disease which contributes nearly one-third of all the cases of affections of the skin that come under notice. The author fully accepts the view promulgated by Tilbury Fox and Rindfleisch of the analogy of eczematous eruptions to catarrhal inflammations of the mucous membranes. While also recognising fully, with Hebra, the value of purely local treatment, he justly insists upon the necessity of remedying constitutional defects, and mentions, what is indeed good, sensible treatment, that he has "repeatedly cured very severe cases of eczema by the persistent administration, for a couple of months, of cod-liver oil and syrup of iodide of iron, all other treatment of importance having been omitted." The pictures of the manifold forms and topical varieties of eczema are accurately described as they really occur, and we gladly recommend this work as one to which practitioners may turn with confidence in search of ample and practical details on the therapeutics of this very common, often mismanaged, but eminently curable disease.

A Practical Treatise on Diseases of the Eye. By HAYNES WALTON, F.R.C.S.; Member of the Council of the Royal College of Surgeons of England; Surgeon to St. Mary's Hospital, Paddington; Surgeon-in-Charge of the Ophthalmic Department of the same; Lecturer on Ophthalmology, &c., &c. Third Edition. London: J. & A. Churchill, New Burlington-street. 1875.

MR. HAYNES WALTON'S original edition, devoted, as its name implied, to operative ophthalmic surgery, appeared in 1853, and, for the period, was a sound practical work; the present re-christened edition embraces the whole subject of ophthalmic medicine and surgery. The quarter of a century which has just elapsed has

been the most brilliant period in the history of ophthalmology, and the most fruitful in results; and we naturally look to this, the latest and the biggest, work for the most recent information, for a correct exposition of modern doctrine and practice, as well as for a calm and philosophical discussion of disputed questions. The chapter on geometric optics is excellent; and that on the ophthalmoscope is worthy its learned author, Dr. Clifford Allbutt. The general surgical portion of the work bears the same character for excellence as the original edition. The work is profusely illustrated by woodcuts, chromo-lithographs, ophthalmoscopic drawings, and five lithographic plates to illustrate the twelve letterpress pages on the anatomy of the organ; the figure representing a section through the retina strikes us as inferior to many previously published ones.

The anatomical introduction is written by Mr. A. T. Norton, who disagrees with Henle, Iwanoff, and others, in considering the hyaloid a distinct membrane, and considers, with Kölliker, that the canal of Petit is a "channel;" no reference is made to the *membrana limitans externa*, but the author says a distinct line separates the bacillary layer from the next, and describes the *macula lutea* as situate in the centre of the retina.

In his description of "punctiform corneitis," Mr. Haynes Walton says:—"When the objective symptoms are at their height, the surface of the cornea looks like a piece of ground glass, and roughened, and the entire cornea is almost white and vascular; a little later the vascularity produces a salmon or pinkish colour, at which time the conjunctiva around gets vascular in fringe-like patches;" and states that Mr. Hutchinson regards this affection as "chronic interstitial keratitis," due to inherited syphilis. We apprehend that Mr. Hutchinson's description refers to interstitial or parenchymatous keratitis, not to *keratitis punctata*, or, as it often is, *serous iritis*. Ophthalmitis and atrophy of the eye-ball are referred to as complications or results of "parenchymatous corneitis," the treatment for which latter affection should be the same as that for "phlyctenular corneitis"—viz., shade, cold water, or spirit lotion, or heat and warm moisture, nutritious diet, change of air, warm clothing, exercise, cleanliness of skin, *chalybeates*, bark, division of blood-vessels going to a chronic vascular ulcer, and with the additional treatment of leeching and tapping the interior chamber. We confess to have seen very many cases of interstitial keratitis, which we regard as synonymous with parenchy-

matous corneitis, make very rapid and perfect recoveries under mercury and chalk, where every other treatment, the tapping excepted, had been tried in vain. The majority of such cases are subjects of inherited syphilis. As to the use of atropine, Mr. Haynes, treating of phlyctenular corneitis, says, at p. 899:—

“A strong solution of sulphate of atropia, often applied to the conjunctiva, is the present fashionable application, under the idea that it diminishes intra-ocular pressure—a false supposition—and that it acts as a local anæsthetic to the corneal and the ciliary nerves, and relieves irritation—a statement not confirmed by my observation. I have discovered only the disadvantages of this alkaloid. Many persons are very obnoxious to its poisonous property, and show the effects in headache, burning sensation in the throat, sleepiness, restlessness, and rapid action of the heart. In other persons it produces immediate and intolerable irritation of the conjunctiva, and erysipelas of the eyelids and of the cheek. In others, again, it is borne well for a time, but afterwards excites irritation of the conjunctiva and of the skin. The dilated pupil renders the eye still more sensitive to the light.”

After such an experience, we do not wonder at not finding mention made by the author of atropine as an agent in the treatment of some complications of myopia, or in keratitis, and we must even wonder how it retains a place in his pharmacopœia at all. A perusal of Mr. Walton's chapters on corneitis, iritis, and pannus, has forcibly reminded us of the advisability of a uniform nomenclature in ophthalmic writings.

Cataract is one of those diseases the oculist is most frequently called upon to treat, and we turn with natural promptings to this new edition for the latest experience and information. Mr. Walton considers that extraction should not be undertaken before middle age, and recommends the old flap extraction, or, as he styles it, *extraction by a crescentic corneal cut*, which is, he says, “the most suited for the removal of a hard cataract; by it alone can the best results be obtained, and, as I believe, the highest average of success. It is preferable to all other methods of extraction, whether in the hands of the inexperienced or in those of the most skilled.” Amongst the hints given are those of dilating the pupil, and greasing the knife with olive-oil. All the favourable and unfavourable results of this method of extraction are fairly pointed out, and the chapter would be complete were the statistics of a few hundreds of flap extractions given. The only other means of treating a hard

cataract, recommended by Mr. Walton, is displacement or depression, commonly known as couching—an operation denounced by a writer in this Journal as dangerous, reprehensible, and unjustifiable. Mr. Walton admits it to be “a very inferior operation to extraction,” but adds, “it should not be condemned and made obsolete. More success may be obtained from it in the hands of unskilful and inexperienced operators than from any form of extraction, because it is an easy operation, and there is very much less risk of accidents during its performance. I have seen good results obtained by men who would probably never get success from extraction.” The author does not mention who these men were. A few pages are devoted to modified linear extraction, which “consists in removing hard cataract through a large wound in the sclerotica, and, at the same time, mutilating the iris, by cutting off a large portion of it.” In his own vigorous language the author quotes—though we must say very scantily, and evidently with a bias—the “reputed advantages of the so-called modified linear extraction,” and forcibly dwells upon the disadvantages—viz., the “mutilation” by the iridectomy, the suspected statistics, its difficulty of execution, and the operation, he says, “is beset with dangers.” He doubts the accuracy of the records of the operation, for he says that “reliable evidence is much wanted,” and states that the success of Waldau’s scoop extraction was “substantiated by inaccurate statistics. If the modified linear be supported only by such evidence, it is not too much to expect that it will be abandoned in time.” Inflammation of the eye-ball, termed usually suppuration of the eye-ball, is a most formidable result of any operation, but causes in flap extraction the most intense suffering and agony for a considerable period; it has been stated to occur in 7 per cent. When it does occur in the linear extraction (in about 3 per cent.) there is usually no such agony or suffering, and, so far as we are aware, this absence of painful suffering is admitted by all candid observers and writers. Mr. Walton’s only observation on this point is, “as an imminent after-risk must be mentioned, that of inflammation of the eye-ball, and which is usually called iritis,” by whom is not specified. Both at home and abroad have appeared statistics in abundance regarding the results of this so-called Græfean operation by men equally dexterous at all operations; it now remains for the practitioners and advocates of the old flap extraction to produce equally trustworthy and reliable tables showing the results of the old flap extraction. We cannot but think that the value of the work would

have been greatly enhanced by a fair and impartial comparison of the two operations, as practised by Mr. Walton himself, and by extracts from his journals, showing his results in tables side by side.

In the discussion of glaucoma, Mr. Walton says that it may occur without abnormal or increased tension, and, *vice versâ*, that abnormal tension may exist without glaucoma. The glaucomatous cupping "produced by the stretching and falling back of the lamina cribrosa, and the falling outwards of the sides, so that they shelve under the edge of the disc," or occurring "as an excavation with steep or straight sides without shelving," is usually attributed to pressure. Mr. Walton's "own impression, after much consideration, is that the disc is primarily at fault, from neuritis and atrophy, and that the abnormal tension produces but a secondary, and, as such, an insignificant part." Incidentally the author states he has "never witnessed such disc excavation" in staphyloma-posticum as referred to by Gräfe; we presume with a view of denying its existence. As regards the treatment of glaucoma, the author says:—"It is my judgment that iridectomy possesses no advantage over any other operation practised for glaucoma, by which the tension of the eye-ball is reduced, and through which the engorged intra-ocular blood-vessels are enabled to be relieved. I believe that this relief is best insured by frequent tapping." Mr. Walton's objections to iridectomy are—liability to cataract from the violence done, and intra-ocular hæmorrhage; "there is always much bleeding in the anterior chambers," "a dazzling sensation and distortion of luminous bodies, the effect of a large lateral pupil in association with the natural pupil, the formation of a cystoid cicatrix at the sclerotic wound," &c.

In the ophthalmoscopic examination of a myopic eye by the direct method, the author says "the image is formed a few inches in front of the cornea, and is apparent to the examiner a few inches farther off. The peculiarity consists in the close proximity of the observer and the observed, and it is called the myopic refraction. It is in marked contrast to the hypermetropic refraction, in which the eyes are very far apart." If in the indirect method "we fix our eye on one of the retinal vessels, and then move our head slightly from side to side, they will move in an opposite direction. After the fundus has been focused, the degree or intensity of the myopia may be judged of by the quickness with which the focus is got, as the ophthalmoscope is carried towards the eye." On the

previous page convex lenses are directed to be applied as test lenses, and, further on, are stated to improve myopic vision.

A consideration of the extracts we have quoted has led us to the conclusion that the work reflects the practice and opinions rather of the individual author than of any modern school of ophthalmology. This very fact will, no doubt, enhance its value to many, and will render the work highly acceptable to those who differ from what we might style the Græfean or scientific school. While some portions of the work fully illustrate "the slowly-won produce of laborious and earnest search, the harvest of long-sown seed and patient husbandry," the brilliant achievements of modern days, other portions remind us forcibly that opinions once formed and practices once adopted are not to be shaken or altered, and would also lead to the inference that the vaunted progress of ophthalmic surgery is only a boast, not a reality.

An Introduction to Human Anatomy. By WILLIAM TURNER, M.B., Professor of Anatomy in the University of Edinburgh. Part I. Edinburgh: Adam and Charles Black. 1875. 8vo, pp. 392.

THIS work was written as the article "Anatomy" for the ninth edition of the *Encyclopædia Britannica*, and it is now reproduced, as a separate volume, at the suggestion of the publishers. The author's "object has been to give an exposition of the principles on which the human body is constructed," and he has not aimed at making it an "exhaustive treatise," nor can it be regarded as a student's text-book.

True to the spirit of an anatomist, the author begins his work with the consideration of the skeleton; and his concluding section of this chapter, on Development and Homologies, is of much interest. In the second chapter, joints and muscles are discussed. We remark that, departing from the usual classification of joints, the author enumerates synchondrosis and suture as immovable joints, while he characterises amphiarthrosis as having a disc of fibro-cartilage, with its centre "soft," or "hollowed out into a cavity, lined by synovial membrane." The muscles are considered in groups, and there is much general information respecting them well worthy of a student's perusal.

In the general consideration of the structure of the tissues which follows, the author has recourse to the very mechanical

division into—(1) cells suspended in fluids; (2) cells placed on free surfaces; and (3) cells embedded in solid tissues. In the second category he lays considerable stress on the histogenetic distinction between epithelium and endothelium, and yet, subsequently, in some places, we find him discarding the term endothelium altogether. On the whole, this chapter has but little to commend it, and we cannot but express surprise at finding some authors specially credited with the attainment of results, while others, whose labours we have always looked upon as of paramount importance, are wholly ignored.

In the consideration of the nervous system, we naturally find Professor Turner more happy, and in the chapter on Organs of Sense there is much valuable matter.

We confess that any feeling of disappointment we have experienced in the perusal of the work is largely due to the great expectations in which we indulged, both on account of its author and its title. The "General Anatomy," in the last edition of Quain, is now antiquated, and we naturally looked to "Turner's Introduction to Human Anatomy" to supply a need increasingly felt for want of a treatise on the general principles of histology.

Cholera: how to Prevent and Resist it. By Dr. MAX VON PETTENKOFER. Translated by THOMAS WHITESIDE HIME, A.B., M.B., &c. Revised by Dr. VON PETTENKOFER. London: Baillière, Tindall, & Cox. 1875. Pp. 75.

MR. HIME has done good service in translating and editing Pettenkofer's little work on Cholera. Mr. Hime has had the advantage of Pettenkofer's own revision of the work in its English dress, so that, if proof were necessary that the author's views are accurately conveyed by his translator, we have it under his own hand. The work cannot be considered as a strictly professional one; in fact, the translator informs us that he means it for general as well as medical readers. We wish we could hope that it would be read extensively by the latter class *before* we again have a cholera panic. There is scarcely anything so remarkable in the constitution of the public mind as the contrast between the panic of epidemic times, and the almost total apathy to sanitary precautions to meet the many and destructive diseases of a preventable character, which are constantly amongst us. The translator's introduction, as might be anticipated, dwells specially upon the relation of ground-

water, and the nature of the soil, and to the sanitary conditions of houses built thereon, giving many illustrations of the extreme permeability of the ground by air and water. He shows very clearly how the gases which permeate the soil between its surface and the ground-water of the deeper strata may be easily sucked into our dwellings, and become as efficient poisoners of the inhabitants as the gases from untrapped or leaky sewers. Ground-water is explained as follows by the translator:—

“Every kind of soil is found to be more or less damp, as we dig downwards, and in many we arrive at a stratum which is evidently saturated, because when the clay is removed the water flows into the unoccupied place from the ground around. The stratum which is thus saturated contains no air within the pores, which exist so abundantly in most soils. The water which excludes the air from this stratum is the ground-water. The soil above it is said to be damp, as distinguished from the saturated stratum. . . . *In fact the rise and fall of the ground-water may be taken as a measure of the dampness of the ground above it ; and it is for this purpose and no other that Professor von Pettenkofer has observed its variations.* . . . At first sight it may seem that the state of the ground-water could be readily measured by the amount of rain-fall. This, however, is not so. Great differences are found in the level of the ground-water in different years which had the same rain-fall ; and different soils are most variously affected by the same amount of rain-fall.”

We doubt the translator's statement that the cholera germ “will not live on ship-board.” We think he also misinterprets the meaning of the able reports of the Medical Officer of Privy Council on the relation between foul water supply and the distribution of cholera in London. The translator says:—

“It has been shown at great pains that the inhabitants of certain parts of London, who drank very dirty water, supplied by particular water companies, suffered far more than others who drank cleaner water. Yet, it has never been shown that the water was worse in the year of the cholera than in any other year, and it is perfectly certain that different localities with the same water-supply, suffer most unequally.”

The manifest interpretation which an ordinary reader would put upon the foregoing is, that bad water has nothing to do with the prevalence of cholera, which is now perfectly well known not to be the case, nor do we think the writer meant such to be inferred, as on the next page he informs us that the germs of the disease may be conveyed by drinking water ; and, again, Pettenkofer himself

remarks—"If pure drinking-water is necessary for health at ordinary times, it is still more so during cholera epidemics."

The translator makes the following curious remark:—

"That cholera is not contagious, in the ordinary acceptation of the term, is established beyond a doubt by authentic circumstances, such as the following:—A ship puts to sea with a detachment of troops on board, who have come from an infected town. A few days after embarkation cholera breaks out among the soldiers, but not a single sailor takes it, although they are in constant attendance on them, and live in the closest contact."

We submit that this proves nothing about the contagiousness of cholera, and the whole book, and the resolutions of the International Sanitary Congress at Vienna, in July, 1874, all prove the contagiousness of cholera "in the ordinary sense of the term." Such a style of writing as the above, although intelligible to professional, will prove very misleading to non-professional readers.

A somewhat similar statement is made by Pettenkofer himself, who writes:—

"Cholera was at first thought to be contagious, because, on its first invasion of Europe, it advanced both by land and sea along the principal lines of traffic. More accurate observation, however, soon showed that in Europe, just as in its native India, cholera only flourished at particular times and at particular places."

Is not the latter part of this paragraph true of all diseases which are contagious "in the *ordinary* sense of the term," as well as cholera? Pettenkofer says that—

"In addition to the specific cholera-germ, which originates in India, there must be some other element not existing within the human body, but connected with the geographical situation, which spreads the poison, and which is not present at all times nor in all places."

"The propagation of cholera is, therefore, not dependent on traffic alone, but the conditions of traffic, time, and place, must all three be simultaneously combined in a favourable manner. To the influence of the two latter factors, the terms *local* and *temporal disposition* have been applied."

The condition of the individual, as to how far he will assist the disease, is termed "*individual disposition*."

The author proceeds to consider the causes of the propagation of cholera under three various heads.

Pettenkofer agrees with most modern authorities in distrusting quarantine measures, but still is of the opinion that traffic should

be kept "as pure and free as possible from the contamination of cholera poison."

The author dwells most on the importance of the fact that cholera "radiates more from infected neighbourhoods than from infected individuals." In fact, Pettenkofer, while not absolutely denying that cholera may be conveyed from one individual directly to another, seems to consider that the affected individual infects the locality, and the locality having become infected, may become itself the centre of an epidemic. He considers that a cholera patient himself may be comparatively harmless, but when placed in a locality capable of being infected, he becomes indirectly dangerous. He inclines to the opinion that cholera discharges are not contagious until decomposition sets in, the germs set free, and the locality becomes infected.

"According to the present state of our knowledge, it is not impossible, nor even improbable, that the excretions of cholera patients in themselves are quite harmless as to spreading cholera, and that a house, *e.g.*, becomes a cholera-den, not because it has a privy into which the excretions of a cholera patient have been conveyed from without, but in a very different and hitherto quite unrecognised manner. This state of affairs, and of our knowledge, renders it necessary for us, in future, if disinfection is to be at all effective, not to confine our attention to the privies of a cholera district, but to look carefully to the various parts of the houses themselves and to their contents."

Cholera is propagated from place to place by traffic, and hence the belief in the extreme contagiousness of cholera. But it is not propagated by traffic alone, but depends chiefly, for its propagation, on the conditions of time and place. So far as seasons are concerned, summer and autumn are the most favourable for cholera. "There is hardly another epidemic importable disease, the average course of which exhibits such a regular dependence on the seasons, as the cholera does in our latitude and climate."

The main feature of the work is the demonstration of the relation between ground-water and cholera, upon which subject the author writes as follows:—

"Just as in certain places the existence of typhoid fever exhibits a certain temporal dependence on the variations of the moisture of the soil, of the so-called "ground-water"—in like manner it is probable that cholera is similarly dependent."

"On the subject of the ground-water and its influences on diseases, it is not rare to find very erroneous ideas prevalent. Many persons regard

the ground-water as in itself an evil, and think that great results might be obtained if it could be sunk some feet deeper in the ground, and so removed further from them, or if they abstained from drinking it, &c. The variations in the level of the ground-water in the porous stratum of the ground are important only as showing the variations in the moisture of the superincumbent layers. The importance of these variations in moisture consists in their facilitating or retarding certain organic processes in the soil, while the ground-water in itself may be quite harmless and innocent in the matter. The ground-water is at present the most accurate measure we have for the variation in the moisture of the soil."

In order to illustrate the foregoing statement, a description of the situation of Munich is given. Munich has a population of 170,000; water-closets are a rarity, and privies are connected with cesspools of considerable size; the surface is level, the upper stratum is very permeable to air and water. The city is built for a great part on gravel, composed of mountain limestone; this stratum rests on marl, which is impermeable to water, and forms a water-tight substratum to the whole district. On this substratum rests the ground-water. The advantages of such a formation are that it confers a great immunity from damp walls, and forms a plentiful source of supply of well-water. The disadvantages are that the porous stratum permits of the accumulation of contaminated air and water; the former being a constant source for the contamination of the air of our dwellings. The contamination of the porous substratum is produced by the constant percolation of the decomposed matters cast upon the surface of the ground. "The ground round about our houses is far more contaminated by the ashpits, privies, cesspools, &c., attached to them, than a church-yard by the bodies in it:—

"Seeing, therefore, the effects of the porosity of the soil, we must be aware of the necessity of making all receptacles for offal of every kind perfectly water-tight, and doing away entirely with cesspools, and all reservoirs in which rubbish of organic matter or impure water is allowed to collect."

* Although the general geological structure of the Dublin district is pretty generally known, it occurred to us to inquire, for detailed information, as to the nature of the soil upon which the City of Dublin immediately stands. By the courtesy of Mr. Hull and Mr. Cruise, of the Geological Survey of Ireland, we were kindly afforded an opportunity of making use of all the information available at the Office of the Survey. Considerable difficulty is experienced in collecting detailed information with regard to the geological formations immediately subjacent to large towns. The information, so far collected, amounts to the following:—The general stratum upon which Dublin stands is an impervious *boulder clay*, under this is situated *culp limestone*. Such

From the foregoing quotations and remarks, our readers will at once perceive that Professor Pettenkofer considers the most powerful "*local disposition*" to cholera to be the presence of a varying ground-water. According to the varying conditions of the ground-water, so the suitability of the soil for the dissemination of cholera germs varies.

We have dwelt at considerable length upon the relation of cholera to ground-water and the nature of the soil, because these are the distinctive features of this valuable little work. The book does not omit to mention all the better-known promoting causes of cholera, and the various methods of prevention.

We are much indebted to Dr. Hime in placing the views of the great German sanitarian before the British public in a convenient form. We commend this work especially to the notice of the new Medical Officers of Health for Ireland, and we would further ask these gentlemen to persuade their non-medical friends to read it. One of the most glaring faults in Irish towns, especially in Dublin, is the constant poisoning of the ground by the accumulation of excreta and house-refuse. We have considerable experience of Dublin slums, and we are bound to state that we have never yet seen, in those localities, a water-tight ashpit or a properly-drained privy. Yet we have seen it publicly stated by the custodians of the health of the city, that the Local Government Board think these matters are well attended to by the Local Authorities. We wish Professor Pettenkofer could see the Dublin slums, and, we think, he would return to Germany with a mind more satisfied as to the sanitary condition of Munich, when compared with a larger metropolis.

a formation should make the site of this city extremely healthy, so far as geological conditions go. But the more recent investigations of the Geological Survey have shown that the portions of Dublin lying along the rivers Liffey and Dodder, a considerable portion of the north-eastern districts of the city, and of the south-western suburbs, stand upon an extensive gravel bed, lying upon the boulder clay above mentioned. This gravel bed is the raised sea bottom, and has been traced along the whole of the eastern coast of Ireland from the north to Dublin. This gravel bed, lying as it does upon an impervious clay bottom, resembles exactly the conditions found in Munich, resembling it more completely in having the river running through its centre. The Liffey being little more than a sewer, and the Dodder being much impregnated with sewage, must, of course, completely saturate the lower portions of the gravel bed with sewage matter. The sewage, by its decomposition, must contaminate the air contained in the porous gravel, and thus the worst possible conditions for health are present through a considerable portion of the city and suburbs. The ground-water of the gravel bed of Dublin must be especially offensive, as it is connected directly with the main sewer of the city—namely, the Liffey, and is, in addition, saturated with the decomposing matter cast upon the surface of the ground.

Clinical Lectures on Diseases Peculiar to Women. By LOMBE ATTHILL, M.D., Univ. Dub.; President of the Dublin Obstetrical Society; and Obstetric Physician to the Adelaide Hospital, Dublin. Third edition, Revised and Enlarged. Dublin: Fannin & Co. 1875. Post 8vo, pp. 294.

WE have spoken in very favourable terms of the first and second editions of these Lectures, and can now speak in still more favourable terms of the third. Two entirely new chapters have been added, treating of "Uterine Therapeutics;" all the others have been revised, some even re-written, and all have been re-arranged, new matter being added where necessary. The work is thus made worthy of the increasing experience and reputation of the author, and is one of the most concise and compendious practical treatises in our possession on the treatment of the diseases peculiar to women; and we again commend it to our readers as affording to the student a most excellent guide to the clinical study of the diseases of which it treats, and to the practitioner trustworthy directions for their treatment on sound and scientific principles.

Principles of Forensic Medicine. By WILLIAM A. GUY, M.B., Cantab., F.R.S.; and DAVID FERRIER, M.D., Edin. Fourth Edition. London: Henry Renshaw. 1875. 8vo, pp. 703.

IN preparing this, the fourth edition of a most valuable work on an all-important subject, Dr. Guy has had the assistance and co-operation of Dr. Ferrier, his successor in the Chair of Forensic Medicine in King's College, London. The two authors have succeeded in giving to the profession a text-book in which principles and results are clearly and briefly stated. The present edition contains fifty extra pages of matter, and is beautifully illustrated with numerous woodcuts. In an Appendix there is an able summary of the medico-legal evidence given in the Tichborne case; and three woodcuts, executed under the direction of Mr. Piercy, illustrate the anatomical differences of Sir R. Tichborne and the Claimant. The description of Mr. Piercy's method of comparing likeness for various legal purposes is very interesting, and we have no doubt that in future this method will be much resorted to. On comparing the Chilian daguerreotypes of Sir R. Tichborne with photographs of the Claimant by this method, Mr. Piercy was

enabled to state that—"It is physically impossible that they could have been taken from the one person;" that "in fact the faces are so far from being alike that they are of opposite types."

M. Tardieu's experiments for the removal of tattoo marks are fully described in the section on Personal Identity, and are of the greatest importance to the medical jurist.

In the section on Wounds and Mechanical Injuries, the different methods for the detection of blood-stains are described, including the use of the spectrum analysis, of which Dr. Falk says:—"It is the most certain, satisfactory, and simple process for detecting blood in medico-legal cases." The guaiacum process of Dr. Day is briefly described—a process that we can recommend from long experience as reliable, easy of application, and requiring no costly apparatus.

The section on Unsoundness of Mind is a very valuable one.

In the section on Toxicology, which occupies almost half the work, a new classification of poisons is introduced. It differs but slightly from Taylor's; and though, as a classification, we are not inclined to find fault with it, we are compelled to protest against this never-ending variety of classifications. The omission of a strong infusion of tea, as an antidote for tartar-emetic poisoning, will, no doubt, be remedied in a future edition; and it is only because every page bears such proof of careful editing that the omission is noticed. It is not always easy to procure tincture of cinchona in the country or at night, but there are very few houses in which some strong tea could not be readily procured.

The description of the sublimation of alkaloids, to which subject Dr. Guy has given much attention, will be found highly interesting and instructive to the expert; but we consider the many different forms of crystallisation described, and the manipulative dexterity required for the experiment, which could not be attained without long practice, unsuited for the student.

To chloral hydrate a chapter is devoted, and, from the known irregularity in the action of this drug, every little information is highly acceptable. The present edition inculcates the necessity of exercising caution in its administration. Chloral hydrate is credited with several deaths—one of a child, from a dose of three grains; another case of an adult, from thirty grains—a dose which most practitioners would consider perfectly safe.

To the student and teacher we heartily commend this work as our best text-book on Forensic Medicine, and the practitioner will find it a book of reference well worthy a place in his library.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

Wednesday, March 10th, 1875.

SAMUEL GORDON, M.B., in the Chair.

Discussion on Scarlatina. [Held over from p. 855.]

DR. GRIMSHAW said he had seen a great deal of scarlatina during the present epidemic, and had had opportunities of meeting patients in hospital, as well as in private practice. In Steevens' Hospital they had treated, he thought, about 150 cases, and probably 100 of these were constabulary patients, who lived under very peculiar circumstances. The remainder of the cases were ordinary hospital cases, met with in Cork-street Fever Hospital, and the patients were selected from the poorest class of society in the city. He considered that the epidemic had extended over the past two years. The difference presented between the patients of Steevens' and Cork-street Hospitals was most remarkable. The principles which guided the treatment in both institutions were substantially the same, and the results would probably have proved similar had the patients lived under similar conditions. The mortality in Steevens' Hospital was almost *nil*. Three patients had died, but two of them were admitted in a dying state, and the third was a delicate boy, who was admitted in a very bad attack of the disease. In Cork-street there was a total mortality of about 15 per cent. The treatment of the patients was divided between Dr. Charles Moore and himself. He was rather surprised to hear some of the remarks made by Dr. Little with regard to the treatment of the disease. With reference to the use of perchloride of iron, Dr. Little was of opinion that it had a tendency to produce diarrhoea. He (Dr. Grimshaw) took a directly contrary view of it, and his opinion was that in cases of diarrhoea perchloride of iron seemed to control this symptom, and where he often employed that remedy in early stages of the disease it seemed to prevent diarrhoea rather than to establish it. His favourite treatment in severe forms of the disease had been iron, or iron and quinine, and he generally commenced very early

with these drugs, and when he thought the disease was apparently assuming a low type, and, he believed, with very considerable success. He agreed with Dr. Little that large quantities of wine were not very generally required. He thought pyæmic conditions were very rare—in fact, he had only one case in which he could say there was generally a pyæmic condition. Brawny swelling of the neck had been uncommon in his practice. The significance of the brawny neck in connexion with prognosis depended upon whether the disease engaged only one or both sides. He had one or two instances where both sides of the neck were affected, and both cases terminated fatally. On the other hand, he had three cases where the affection was confined to one side. Two out of the three recovered in Steevens', but one died in the Cork-street Hospital. One patient, a little boy, who had the brawny affection on one side of the neck, and an abscess on the other, recovered. As to the treatment of these brawny necks, he generally gave them some time to see how they were going on. In one of the cases where an incision was made early into the neck, in consequence of its apparently very rapid increase, he consulted his friend and colleague, Mr. Colles, who advised the incision to be made. This was accordingly done, and a very small quantity of purulent matter came away. It was a very small quantity indeed. This case made a good recovery. He had on several occasions met with cases where there were black spots. Most of these examples were met with in Cork-street Hospital. He also met with one in the constabulary cases. It was a very severe case, but the patient ultimately recovered. He had numerous and very large dark spots all over his body. He had also an abscess in the neck. This man, as he had already observed, ultimately recovered. The sudaminous eruption he had met with very rarely, but he had had two or three cases in which it was found. He met with one case where there were half a dozen large vesicles formed. This person made a slow recovery, with no other peculiar feature. The scarlatinous buboes were not generally, in his experience, of a very severe character, except in some of the worst cases. He had met with three cases where they occurred in the capillary glands—one in both sides, and the other two in one side only. He also met with one case where the glands of the groin were affected, but suppuration did not take place. Rheumatism he had found not very frequent, although he had met with some rather simple cases of it. He had had a considerable number of patients under his observation—he thought over 200—in the two hospitals he had mentioned, and one of the most remarkable features about them was the strong contrast between the two classes of patients—the constabulary-men living under healthy circumstances, and the unfortunate people in the Cork-street institution picked from the wretched slums of the Liberties. He thought it was not necessary to enter into the question of syphilis or hereditary taint, but the nature of scarlatina was generally

due to the manner in which the patients were living at the time they contracted the disease. This subject was brought under the notice of the members of the British Medical Association by the President, at its last meeting at Norwich, and Dr. Copeman had described how the fact of living under unhealthy conditions determined the death of a number of the members of a family that had contracted poison from some source, and who had all the hereditary predisposition. Some of them escaped because they were removed to another place. Those who remained longest under these unhealthy circumstances died.

On the motion of PROFESSOR MOORE, the debate was adjourned.

Special Meeting, Wednesday, March 24th, 1875.

JAMES FOULIS DUNCAN, M.D., President, in the Chair.

[Adjourned debate on Scarlatina.]

DR. GORDON said:—On the last night of meeting, when the discussion on Dr. Little's and Dr. Foot's papers was adjourned, I undertook to have a record prepared of the cases of scarlatina which were admitted to the hospitals of the House of Industry for the last few years, but, I am sorry to say, I have not been able to do much more than get a tabular account of them. As you are aware, looking back from year to year, we are rarely without a number of scarlatina cases in these hospitals, and I have taken the trouble to look back some years to compare them with the last two years, when there has been certainly what we may call an epidemic of scarlatina.

A Return, showing the Number of Cases of Scarlatina treated in the Hardwicke Hospital during the last fourteen years, from April, 1861, to March, 1875.

No.	Official Year ending 31st March	Number Admitted	Number Died
1	1861-2	67	6
2	1862-3	65	9
3	1863-4	52	8
4	1864-5	21	3
5	1865-6	14	3
6	1866-7	40	1
7	1867-8	30	4
8	1868-9	79	12
9	1869-70	97	9
10	1870-1	109	11
11	1871-2	84	8
12	1872-3	12	3
13	1873-4	64	17
14	1874-5	167	33
	Total,	901	127

A Classified Return, showing the following particulars relative to the Scarlatina Epidemic of the last two years (April, 1873, to March, 1875).

Official Year ending 31st March	Number Admitted			Admissions at Ages							Number Died			Deaths at Ages								
	Males	Females	Total	Under 5 years	5 and under 15	15 and under 30	30 and under 40	40 and under 60	60 and under 80	80 and upwards	Total	Males	Females	Total	Under 5 years	5 and under 15	15 and under 30	30 and under 40	40 and under 60	60 and under 80	80 and upwards	Total
1873-4	34	30	64	11	36	6	11	0	0	0	64	8	9	17	6	8	0	3	0	0	0	17
1874-5	73	94	167	23	92	27	24	1	0	0	167	13	20	33	8	19	1	5	0	0	0	33
Totals	107	124	231	34	128	33	35	1	0	0	231	21	29	50	14	27	1	8	0	0	0	50

Out of these 231 cases, admitted from 1873 to 1875, only a small proportion, about one-fourth, came under my observation, so that I cannot attempt to go into an account of the entire number of cases, but must confine my remarks to those which came under my own care. Of these cases the mortality occurred principally among children, I may say infants, aged one, two, three, four, and up to five years. The admissions under five years of age (I am now speaking of the last two years) were 34, and the number of deaths was 14. These children were admitted principally from the workhouses of the North and South Unions, and from very poor localities in the immediate neighbourhood of the hospital, principally Beresford-street and Greek-street. They survived their admission generally but a very short time, and were admitted, some of them, in almost a dying state. Some few of them were admitted in a state of collapse, and made no rally, the scarlatina being merely marked by the patchy eruption over them, sufficient to mark the nature of the disease, but never having become general or efflorescent to any marked degree. There were some deaths in adults. There were 35 patients admitted, of ages varying from twenty to forty, and of these 8 died. Of these 8, two or three were policemen, well nourished, well fed, and admitted in a very early stage of the disease, but who seemed to have been struck down by a great amount of scarlatina poison, and died in what we may call the first stage of the disease. I remember one particularly strong stout policeman, thirty-two years of age, who was ill only one day before admission, and died within 36 hours afterwards. We had altogether seven cases of scarlatina, combining the puerpural condition. Five of these, I think, were admitted from the Rotundo Hospital, and two from private houses. The mortality among these was very great. Out of the seven cases six died. I had one very well marked case, which fortunately recovered. She was a woman twenty-five years of age, admitted from the Rotundo Hospital. She came in with the scarlatina eruption well developed. The disease was principally marked by the intense amount of nervous symptoms that were developed. She was perfectly delirious on admission; did not know any one; did not know where she came from; and this state continued for 48 hours, along with complete insomnia—she was 48 hours without having slept for half an hour. The nervous symptoms gradually subsided. The throat symptoms then became very much developed. She had very great dysphagia, and external swelling of the glands, and a considerable amount of swelling of cellular tissue around the throat. These symptoms all gradually subsided, and she went on remarkably well until about three weeks after admission, when she was seized with intense rigor, and this was followed by a large abscess which formed in the gluteal region, which gradually matured and was opened, and she recovered.

At the same time, in the adjoining ward, there was a case of pretty

much the same kind also admitted from the Rotundo Hospital. It ran very much the same course for a considerable time, and she appeared to be getting well, when she was also attacked by a rigor, and this rigor was followed by a large abscess, which did not exactly occupy the gluteal region, but was situated at the lower part of the spine. This became diffused, did not take on the healthy condition assumed by the abscess in the other cases, and ended in a form of phlebitis and diffuse inflammation, under which she succumbed. I do not know that there are any other important points to dwell upon, except that we had several cases of the brawny swelling of the throat, to which Dr. Little alluded on the last night, and, as a general rule, these were fatal, particularly where it occurred in young children. There was one very well-marked case of it, in which there was the best-marked instance of brawny swelling of the neck I have ever seen in a girl five years of age, and I am glad to say she perfectly recovered, but after a very considerable time. I cannot say her recovery was owing to any particular line of treatment. When the disease comes on rapidly, with a great deal of hardness and swelling, I think there is a decided advantage in these cases from the administration of mercury, in very small doses, for a few days. I first learned this treatment from Sir Dominic Corrigan, who has published some remarks on the subject. He gives, for some two or three days, two grains of grey powder four or five times in the day, combined with a few grains of Dover's powder. That was the treatment I adopted with the child referred to, giving her very light nourishment, and afterwards using fomentation and poulticing, and keeping up her strength with iron and broth, and allowing the abscess to open of itself if possible. In this case the abscess opened of itself after a considerable time, giving exit to a very large quantity of matter that continued discharging for a considerable time, and at length she got perfectly well. These patients came, generally speaking, from the unhealthy streets in the neighbourhood of the hospital. There were a great many servants, about twenty in all, admitted from private houses in different parts of the city during the last two years.

DR. DARBY.—How long after parturition did these women show symptoms of scarlatina?

DR. GORDON.—I can speak only of one case. The woman came into hospital two days after her confinement, and she recovered. We had very few cases of the complication of the joints.

DR. FITZPATRICK said it was now upwards of thirty years since his first attempt at writing a paper; it was on this disease. In the year 1841 there was an epidemic of scarlatina, and at that time, the characteristics

of the disease were purely inflammatory. They would see the patient attacked and carried off in a few days without any amelioration of the symptoms whatever, and they had little notion at that time of the condition of poison in the system. He happened to be attending a child for scarlatina in Rathmines, and a few days after her recovery her aunt was attacked by the disease. He ordered her ten grains of calomel and ten grains of James's powder made into six pills, one to be administered every six hours. The next day the lady expressed her gratification at the relief of the throat symptoms, but added, "You have salivated me, and I ought to have told you that I am peculiarly susceptible to the influence of mercury." That case went on very well. He then tried the effect of mercury in other cases, and, as far as he went, he had sufficient grounds to recommend the exhibition of small doses of mercury to children exposed to scarlatina, not as a prophylactic, but as an alterative, so that when they were attacked a very short period would bring them under the influence of the drug; and, as far as he had an opportunity of judging of treatment by mercury, it was efficient at that time. But one year had scarcely elapsed when a totally different phase of the disease presented itself. There was not, then, a condition of inflammation, but of poisoning of the blood, death following after a very short time. Under these circumstances he gave up the idea of mercury, and endeavoured to investigate what was the best means of meeting this terrible disease. He arrived at the conclusion that it ought to be viewed in three aspects—first, as to the amount of poison in the system; second, as to the power of resistance of the patient to that poison; and, third, as regards the means of eliminating the poison from the system. He feared that in many of these cases their remedies were perfectly useless. Where they saw a patient attacked with a severe form of scarlatina, particularly if the brain and nervous system presented the first indication of the disease, they need not expect their remedies to be attended with any beneficial effect. He still thought that mercury was of use to a certain extent in those cases of severe poisoning of the system where there were marked inflammatory symptoms, and he agreed with Dr. Gordon in that treatment. He had found the use of chlorate of potash and solution of chlorinated soda beneficial; and, where the throat was sore internally, he used a linctus of solution of chlorinated lime, glycerine, and honey, and applied poultices outside. The object of the use of mercury, in former days, was best expressed by the words, "thinning of the blood," so as to prevent any organ being particularly attacked, but they had found that that was not a true theory. He remembered one very remarkable case which he attended with another medical man in Kingstown. The patient—a child—was first attacked with ulceration and brawny thickening of the throat. That was relieved, and a week afterwards the child was attacked with diphtheria. He swabbed the part with the solution

which he had mentioned, and told the mother that she had better try if she could get away any more of the leathery secretion. He and his colleague had hardly retired to the drawing-room when the mother sent for them and exhibited a perfect cast of the larynx. The child was suffocating, and she put in her little finger and picked out a cast of the larynx, greatly resembling the finger of a child's glove of chamois leather. The child greatly improved, but, at the end of a week, it exhibited symptoms of purulent effusion into the joints and died—thus showing that the diffusion of the poison over the whole system did not afford any security to the patient, as had formerly been supposed.

DR. DARBY said he well remembered the epidemic of 1841 and 1842, and also those which occurred since—a great distinction presented itself between them. Indeed, he never saw two epidemics that were strictly alike in all their characteristics. In those days he never saw any cases of diphtheria in connexion with scarlatina, and he looked upon it as comparatively a new disease. He was happy to say he had not seen many cases during the late epidemic, but in those he had seen the symptoms were for the most part mild; and he believed that was also the experience of his brother practitioners in his part of the county of Wicklow. One very marked characteristic of the epidemic of last winter was that there was no tendency to suppuration. He did not see a single case in which any suppurative action was set up—the sequelæ which he had observed were either dropsy or rheumatism. Dropsy was frequent in the milder cases, and these he treated with small doses of tartar emetic, repeated frequently in the early stage—a treatment which appeared to him the best suited to meet the symptoms. The rheumatism was peculiar; he had a case of it at that moment under his observation. The patient—a boy—had been at a school where scarlatina broke out; he was sent home, as not having had the disease. Soon after coming home he got what the attending physician thought was mumps, and in confirmation of his view he told him (Dr. Darby) that, beside the swelling of the neck, the child had a swelled testicle. He (Dr. Darby) said it struck him that the child had had scarlatina, but the reply was, “No such thing.” On examination the urine was found to be albuminous. The mother, on being questioned, stated that there was no sign of desquamation. The case lay in abeyance, and a few days afterwards, when he again came to see the child, the skin was peeling off in large flakes from the hands and body. There was no eruption in this case. The child had inflammation of all the smaller joints—arthritic rheumatism, but no tendency to suppuration, and was getting well under the influence of tincture of iron and cod-liver oil. He had not seen any case of brawny neck for a long time. In 1842 and 1843 he saw nine cases, and nine only; eight of these died. Dr. Leney, of Bray, brought him to

see one of these cases as a curiosity. There was diffuse inflammation, but no attempt at suppuration. The neck was of a leaden colour, and as hard as a stone. A blister had been applied, the part became gangrenous, and the whole lump sloughed out, and he could see the pulsation of one artery, which he believed to be the carotid, at the bottom of the cavity. That child recovered, and was the only one of the nine that did so. He believed that when suppuration took place in a case of brawny neck, it was an exception to the rule, and was to be regarded as a favourable sign. With regard to Dr. Fitzpatrick's observations, he thought it right to say (though they might be angry with him for saying it) that he did not understand what was meant by blood-poisoning. To his mind the words conveyed no significance whatever. He had asked many of his medical friends to explain what they meant by it, but they had failed to do so to his satisfaction. He knew when a man was very ill; he might know when he was suffering from phlegmon, diffuse inflammation, or any specific disease, but he knew no more what blood-poisoning meant than he knew what was going on in the moon.

DR. DOYLE said that while recently acting as *locum tenens* at Baldoyle, that village was visited by the epidemic, which it was stated had spread from Malahide to Baldoyle. The persons who were affected were principally the poor. The sanitary condition of Baldoyle was very bad. The houses were principally thatched, and many of them had no yards. The majority of the children had attended the one school. Those who had recovered from the disease would run out into the road when in the desquamatory stage, and play with the other children, and by that means the disease was spread. In the majority of the cases the disease set in with pains, and in many instances there was no rash. A high temperature and a quick pulse were the first indications that led one to suppose they were getting the disease. Generally they had a slight inflammation of the throat, but what occurred was principally external inflammation of the cellular tissue of the neck, and the majority of these recovered. They had not internal sore throat, and could swallow well, and had no exudation from the nostrils, but these cases, where all these symptoms were combined—external inflammation, internal soreness and exudation from the nostrils—all died. In many of the cases where diffuse inflammation existed, suppuration occurred, and left very little marks afterwards. In one case inflammation was set up in the ankle-joint, which tended to abscess. That did not go on to suppuration, but symptoms of cerebro-spinal meningitis set in that terminated fatally. In two cases great care was taken of the patients, because one of their brothers was suffering from renal albuminuria. They were kept in bed in their room and carefully protected from cold, yet albumen was found in the urine, and they suffered from symptoms of dropsy; and it was evident that

congestion of the kidneys had set in with the disease, and existed before desquamation occurred. As regards the sanitary state of Baldoyle, it was a remarkable fact that those who lived under the worst sanitary conditions were the persons who recovered. It was also a remarkable circumstance that although there was daily communication between Baldoyle and Howth, there was not a single case of scarlatina in the latter place. There was one very mild case in Sutton, but the disease never went round the Hill of Howth. No rule could be held out as regards treatment. He had found stimulants necessary—such as port wine. The wine supplied to dispensary patients was of a very poor quality, but such as it was they seemed to derive great benefit from it.

DR. DARBY could confirm the statement of the previous speaker, that the persons who lived under the worst sanitary conditions often escaped better than those who were more favourably situated. The children of the poor did not die of this disease so much as the children of the rich. With regard to Dr. Grimshaw's comparison between the mortality among the pauper children in certain unhealthy localities and the policemen sent into his hospital, he would observe that, according to his experience, scarlatina was not so fatal a disease in adults as it was in children.

DR. HENRY KENNEDY said:—As I witnessed the epidemic of 1840—which, however, existed both before and after that period—I would say it was very much more widespread than what has recently been seen, and I believe it was much more severe. The brawny neck was then very common, and the sloughing which followed was, in numerous cases, of the most extensive kind. I myself saw some four cases where fatal hæmorrhage occurred as the result of the sloughing of the neck, and where the bleeding came from the internal jugular vein. In one instance this vessel had given way just where it joins the subclavian vein. The arteries seemed to resist the process very much more than the veins, but in the case given by the late Mr. Porter it seemed to be the carotid which had ulcerated. As a curious and probably unique example of what the sloughing process can effect, I may refer to a case I lately brought before the Pathological Society, where the entire clavicle came away in the discharge of an abscess. The patient was a girl of five years of age, and what was most interesting to observe was the very little deformity which resulted, or the trifling impediment to all the natural movements of the arm.* Besides the effects of the sloughing process, there was another striking feature in the epidemic of 1840, which I have not happened to have seen in later years—I mean secondary fever; that is, after the attack of scarlatina had lasted eight

* To Dr. Nolan, of the Summer-hill Dispensary, I was indebted for the opportunity of exhibiting this specimen.

or nine days, and a marked lull had taken place in all the symptoms, fever again lighted up, and the patient would pass through an illness as like typhus as it was possible to be. This showed itself in both children and adults, and had the closest analogy to the secondary fever of small-pox. Those were some of the striking features of the former epidemic. Of the late one the most striking was the great frequency, not only of the dropsy, but also of the presence of blood in the urine. These proved very obstinate cases, and in some I recently saw their duration was very prolonged. As the subject of puerperal scarlatina has been spoken of, I may state that, through the kindness of Dr. Johnston, I saw most of the cases sent from the Rotundo during the last year or two; and I am able to say that in most of them there was clear evidence of their being ill before their confinement, and then the moment this took place signs of scarlatina made their appearance. This I take to be an important fact, as bearing on the question of the healthiness of large hospitals.

In the last place, I would make a few remarks on treatment, and must venture to differ from what fell from Dr. Little on the last night of meeting. I believe treatment has a direct influence on the disease, and that if constant attention be given, for example, to cleansing the nose and throat when these parts are involved, much will be gained. This can now be readily accomplished by means of an elastic bag and a weak solution of the sulphurous acid, such as Dr. Foot recommended for the treatment of small-pox. I believe, too, that internally the tincture of perchloride of iron does good; and in passing I would just observe that this preparation is not iron alone, but also muriatic acid, which is a very old and long-established remedy for fevers. The one, however, in which I myself place the greatest confidence is barm. When given in suitable cases, and in proper doses, I cannot doubt its value. The cases in which it does most good are those where there is a tendency to putrescency and stripping. The colour of the rash is rapidly altered, just as in typhus fever, and the other symptoms improve *pari passu*. The only cases of the bad form of puerperal scarlatina I have ever seen recover were cases in which barm was given. Many other points remain to be noticed, but I do not wish to detain the meeting too long.

The PRESIDENT—There was one observation which fell from Dr. Darby in which I fully concur—namely, that different epidemics present different features. When I was a student the practice of Dr. John Crampton in scarlatina was to bleed, and those cases did remarkably well. At that time—from the years 1835–7—I was impressed with the idea that when a case of scarlatina terminated fatally it was through injudicious treatment, but I learned, in the instance of a friend of mine, to correct that opinion. The first fatal case I ever saw of it was that of

a gentleman who lived at Newry. He went down to Ennis to attend the funeral of his sister, who died of scarlatina. He did not see her alive, and after attending the funeral he came up to town, took ill at the Imperial Hotel, and was unable to proceed further, and that case died in the course of three or four days, and it was as complete an example of the typhoid phase of scarlatina as I have ever seen. That occurred in 1842, when the change in the character of the epidemic took place. There is one point which ought to be impressed on us—namely, not to tie ourselves to any line of treatment, not to degenerate into routine. In severe epidemics, different cases require different treatment or modifications of treatment. Of late years I have not had an opportunity of seeing scarlatina to the same extent as I used when acting as physician to a public hospital; but as far as I have been able to ascertain, I think we must regard as one of the chief peculiarities of the late epidemic the very frequent occurrence of dropsy after it. Formerly dropsy was the exception, now it appears to be the rule. The tediousness of the cases and the difficulty of managing them were also features of the late outbreak of scarlatina. In some cases within the last few months which I have seen, we had it accompanied with a tendency to articular rheumatism.

DR. POLLOCK said he had been physician to a dispensary for a great number of years, and in his experience every epidemic—measles, small-pox, scarlatina, &c.—had commenced among the poor, and afterwards spread into the houses of the rich. How did Dr. Darby reconcile that with his statement that the people who lived under bad sanitary conditions suffered less than the rich? He could bring forward numerous instances where small-pox had spread rapidly owing to bad drainage. In one family at Booterstown, whose cabin was surrounded by stagnant manure pits, every individual died. No general law as to treatment could be laid down. He had had a case where he could not give a drop of wine, and another case in the same room in which it was absolutely necessary to give stimulants. As to the throat affection, he believed caustic applications were very injurious, and that washing out the throat with warm water was the most effectual remedy where the throat was inflamed. When there was extensive ulceration he used a glycerine solution, and found a beneficial effect from it.

DR. DARBY said the fact (if it was a fact) that the poor were more numerous than the rich, might explain why the former were the first attacked by epidemics. He did not think, however, that such was the case. He had seen epidemics of measles, small-pox, cholera, and scarlatina, and the first cases he had seen had occurred in the houses of the gentry.

DR. SIGERSON was in Paris when the last epidemic of cholera arose, and it was generally understood that it had been first brought into that city by a lady of position, who put up at the Grand Hotel at the Louvre; but, on the other hand, there could be little doubt that cholera prevailed most in the districts in which the poor dwelt, and in which there was great crowding. Several of the speakers had referred to the diversity of types that prevailed in scarlatina. He wished to say that one portion of the French school had recognised as separate classes the different forms that had been so accurately described by the gentlemen who had spoken that evening. Thus they had the inflammatory, the nervous, the typhoid, and the hæmorrhagic forms. With regard to methods of treatment he had nothing to say, except that in the nervous form of the disease the affusion of cold water had been practised in France with a certain degree of success. In certain cases of the hæmorrhagic form blood had come away in the urine as had been described, but of course it would be necessary to distinguish with great care in such cases whether the bleeding might not have arisen from some other cause. The presence of a sarcoma in the bladder would cause blood in the urine. In other cases epithelium might be found coming away, and here it would be necessary to recognise where the epithelium came from—whether from the bladder, the ureters, or the kidneys—and that was a question which would require very nice discrimination.

DR. GORDON thanked the gentleman who had just sat down for reminding him of one point that he had forgotten to mention—namely, that several of the worst cases of scarlatina which had come under his notice were marked by extreme nervous symptoms, insomnia, delirium, accompanied with intense heat of skin and high pulse, and the recovery which took place in many of these cases he attributed almost entirely, if not altogether, to the cold affusion. He had a long reclining bath placed at the side of the bed. The patient was placed in the bath; a hot blanket was placed on the bed, and one or two hot sheets. The patient was taken out, laid on the bed, and the blanket turned over. In five minutes, more or less, there was profuse perspiration in almost every case, and when that occurred the patient generally recovered. At least fourteen or fifteen cases were treated in that way, within the last year and a half, and of these he thought he was under the mark when he said ten or eleven recovered.

DR. PEELE said that, while acting as *locum tenens* at the Meath-street Dispensary, in 1873-74, a number of scarlatina cases came under his notice. The fact mentioned by the President, of the frequency of dropsy after the recent epidemic of scarlatina, he noticed particularly—so much so, that it became his custom to warn the parents to protect the children

carefully for a considerable time after the fever was over, or they would be certain to get dropsy. He had seen almost all forms of scarlatina in the Meath-street dispensary district, and he could bear out what Dr. Pollock had said about the sanitary condition of the houses having a considerable influence on the character of the disease. It was always worse in the poor, ill-drained, ill-ventilated places, than in those where the sanitary condition was better. He had seen several cases of brawny neck; and in one case, where there was considerable exposure of the nerves, arteries, glands, &c., the child died in great agony. Where the cases were simple, and there was no severe sore throat, he used a diaphoretic mixture, containing chlorate of potash, with good effect, and adopted poulticing and fomentation for brawny neck. Sometimes abscesses followed under the jaw, which he opened when ready, and these cases all recovered. He saw several cases of scarlatinous rheumatism, for which he successfully gave the patients small doses of iodide of potassium. This treatment he had learned from Dr. Little. In cases where renal mischief formed, the hot baths, poultices to the loins, compound jalap powder, diuretics when required after the subsidence of inflammatory symptoms, and, finally, tincture of the perchloride of iron he found to answer remarkably well, with careful dietary.

DR. LITTLE said that the valuable paper read by Dr. Foot, on the last night of meeting, dealt with the subject of scarlatina in all the aspects under which it claimed our attention. He had merely discussed the treatment of the disease. He was not so foolish as to think that scarlatina or any other malady could be treated in a routine manner. But every physician, who had seen a number of cases, must be aware that certain emergencies were more or less liable to occur and to demand interference; and in his paper he had endeavoured to define these emergencies, with the view of eliciting the opinions of others as to the best way of meeting them. He was sorry that his friend, Dr. Kennedy, was under the impression that he (Dr. Little) believed treatment had little influence on the course of scarlatina. With regard to the throat, he had specially pointed out the importance of cleansing it with the carbolic solution. Dr. Kennedy's name would be ever honourably connected with the literature of scarlatina, and he hesitated to differ with him on such an important point as the use of the tincture of perchloride of iron. He did not profess to know how far the iron and how far the muriatic acid might favourably influence the disease. He did not form his opinion as to the remedy on chemical or speculative grounds, but on experimental evidence. No person who had seen a number of cases of non-traumatic erysipelas, treated by the various remedies formerly used, and had then seen a number treated by full doses of the tincture of iron, could form any other opinion than that the drug exercised a marked and beneficial

influence over most cases of erysipelas. If he had observed any similar effect from its use in scarlatina, he would not have given it up, but he had failed to do so. He might be wrong in attributing to it the production of diarrhoea. He had usually given it in combination with the chlorate of potash, and in full doses. This drug was certainly prone to cause looseness of the bowels. In this epidemic he had been greatly struck by the fact mentioned by Dr. Doyle, that congestion of the kidneys was unusually frequent as a sequelæ, and often occurred in persons who had never left their beds.

DR. FOOT expressed his pleasure at the coincidence of ideas between himself and Dr. Little as to the principles of treatment. Dr. Little did not advocate any routine treatment, but distinctly stated that there was no specific for scarlatina; that he did not cure scarlatina; but conducted that formidable and treacherous disease safely to a termination, according to the type of the disease and the constitution of the patient. Between him and Dr. Little there was but a variation in the most minor details of treatment. He found that ice was very useful in cases of inflamed throat. Dr. Little found that spitting out the fluid was troublesome; but then he (Dr. Foot) restricted the use of ice to grown-up patients, who understood how to keep it in their mouths. As to the use of nitrate of silver, which was criticised, he confined it entirely to one form—the catarrhal inflammation of the throat, where there was redness and hyperæmia of the mucous membrane. It was not intended as an astringent, but as a direct sedative to the annoying spasm in the throat, and then it must be a strong solution. With respect to Dr. Doyle's observation of dropsy occurring in patients who were perfectly protected from cold, he agreed with it. He believed the scarlatina poison affected three parts of the body—the skin, the tonsils, and the kidneys; and it was not always from cold that renal dropsy arose, for it might occur in children who were never outside their warm rooms, and it did not necessarily occur in the children of the poor, who ran about with bare legs in the streets just after their convalescence.

The Society then adjourned.

Wednesday, April 14th, 1875.

JAMES FOULIS DUNCAN, M.D., President, in the Chair.

DR. WALTER G. SMITH read a paper, entitled, *Notes on Some Diseases of the Skin*—(a.) *Favus*; (b.) *Erythema Multiforme*. [It will be found at page 391.]

DR. FOOT said he had a few remarks to make with reference to an interesting point alluded to—viz., the communication of ringworm by

favus. Some of the highest authorities were against the idea that *favus* will produce ringworm, or ringworm *favus*; still there were cases that it was very difficult to account for otherwise than by the assumption that *favus* can produce ringworm, and *vice versâ*. A case in point came under his observation lately. Every one was aware how prevalent *favus* was in mice, and that it was communicated by them to cats, and also to dogs; and, in this manner, *favus* often got into the houses of the better classes—from the cat to the children, and from the children to the older members of the family. There were two mice affected with *favus* in the bottle on the table, and there was some reason to believe that they had had something to do with spreading ringworm in a barracks in Dublin. A gentleman caught in the barracks the female mouse with the disease on the right side of the face. He brought it to him (Dr. Foot), asking if it were cancer, and he explained to him that it was *favus*. Some time afterwards, eight or ten soldiers were found to be affected with ringworm, and a careful examination of the horses was made, in order to ascertain whether the disease might not have been communicated from them, but no ringworm was found in the horses. Matters were in this state when the same gentleman, being of an observant turn of mind, noticed a soldier carrying a cat across the barrack-yard. He asked the soldier about it, and was told the cat had the mange, and on examination he recognised *favus* in the cat. It came from the quarter where the eight or ten men had been invalided from ringworm. About six or eight weeks had elapsed from the time he (Dr. Foot) had first seen the gentleman on the subject. He was informed that these mice were very common, and that any number of them could be obtained. He asked the gentleman to procure some more of them for him, but he could only succeed in getting one—for in the meantime suspicion had been fixed on the mice, and the soldiers made a raid on them, and killed nearly all of them. The specimens procured showed the disease on the ear, the part most generally attacked in mice, and in mice *favus* assumed a cancerous condition, eating through the skin and deeper structures, and ultimately killing the mice. He (Dr. Foot) did not see the alleged cases of ringworm in the barracks. He was inclined to agree with Dr. Smith that *favus* can produce only *favus*, and that the more careful and accurate the observations made, the less they would hear of the transformation of this disease. It was believed, by some, that the spores of these low fungi often were influenced in their development by the soil they fell upon—that, as gardeners say, they did not always come true—and that peculiarities in the constitution of the person might have this effect. That was the line of argument adopted by those who believed that *favus* can produce ringworm, and *vice versâ*.

DR. MACSWINEY said that for a number of years he had been in the

habit of observing skin diseases, and he should now make a few remarks on the subject from a practical point of view, and not approach the difficult scientific questions raised in Dr. Smith's paper. He never had the least reason to suppose, in any of the numerous cases he had observed, that there was any connexion or relation between tinea tonsurans or common ringworm and favus. He thought it would have been interesting if Dr. Smith had given his experience or his opinion of the best mode of treatment. He, himself, had seen an instance in which a very barbarous but very effectual plan of treatment was adopted—namely, the application of the pitch cap, by an old woman, to three children suffering from undoubted favus. It consisted of a piece of calico smeared over with black pitch, and applied to the head of the child, the hair having previously been cut as closely as possible, and a poultice applied to soften the crusts. The cap was allowed to remain on for three or four days. Previous to pulling it off, it was split up into three or four flaps or pieces. The woman, in removing it, took hold of the piece at the free extremity, and violently tore it up. The depilation was complete, the favus was effectually cured, and the children, who were now alive, had perfectly good hair. At the time of the operation they varied in age from six to ten years. He had frequently seen erythema nodosum, and had always regarded it as a specific disease, not merging into any other erythematous affection, marked by its specific fever, running a course of a few days and then subsiding.

DR. HENRY KENNEDY confessed, till he heard Dr. Smith's paper, he should not have thought favus such a rare disease as he had described it. He had seen a large number of these cases, and in many of them the nails were brittle, quite independent of the disease. Dr. Foot's remark as to favus attacking the lower animals brought to his mind an instance in which a cat was attacked by that disease. A gentleman in this city had a large and favourite cat, which was attacked in one ear with favus. He suggested to the gentleman to treat it internally with arsenic, and by giving the animal a drop daily of Fowler's solution it was cured. After several months the disease returned, and the gentleman again had recourse to arsenic, and cured the cat. At present he (Dr. Kennedy) had a case under his observation where, after five years of total baldness, the hair had come back to the head. He thought it doubtful that these diseases were communicated in the way Dr. Foot had suggested. If a person was healthy he would not receive the poison; and he attributed these diseases to causes arising from within, and not to their being communicated from other individuals.

DR. SIGERSON said the idea of different diseases arising from the same fungus was not *à priori* improbable, as the experiments of botanists had

proved. Any one who read the works of Berkeley and Cooke would find instances given where, for a considerable time, there was a distinction made between certain fungi, and afterwards it was found the difference was due to polymorphism, and not to any radical difference—that it was not due altogether to the soil on which the spore fell, though that would have some influence, but to the laws of the evolution of the being itself. He thought, however, it would be admitted that there had been no imperative evidence yet given to control their assent to that proposition. With reference to the point raised by Dr. Kennedy, that gentleman would admit that the growth of parasites on the human skin would avail to produce alterations in that structure, by absorbing certain matters in it, and this would produce degeneration. Recently, Dr. Malassez had been making a special study of a fungus in the laboratory of Dr. Ranvier. He found that it grew very extensively on the heads of the workmen employed in the laboratory, that it absorbed the nutriment which should go to the hair, and that the decay of the hair on certain parts of the head was to be attributed to the growth of the fungus.

DR. SMITH briefly replied. He observed that it was a singular fact that favus in the lower animals should be so much more destructive than in human beings. In canaries it attacks the beaks of the birds, and was called cancer by the dealers. He had seen the head of a mouse half eaten away by it. He thought the upholders of the theory, that favus can be convertible into ringworm, ought to prove the reverse—that ringworm can be converted into favus, which certainly had not yet been done. The reason he did not refer to treatment was because he had nothing new to offer; and he had had no opportunity of trying any continued means.

DR. J. W. MOORE read a paper, written by DR. GRENSHAW and himself, on *Pythogenic Pneumonia*. [It will be found at page 399.]

DR. MACSWINEY regretted that there was not sufficient time left to discuss the various points raised in this very elaborate paper. He should only remark for himself that what struck him most, in respect to it, was the great danger in such a city as Dublin of pythogenic pneumonia being contracted on a large scale, owing to the trapping of sewers being so defective, and to the frequent opening into the houses of the housemaids' traps, which were directly in communication with the street drains. Many of our best houses were in direct communication with the street sewers, either where the water-closet was within the house, or, being outside it, where the pipe for the accomodation of the housemaid opened into the house. Protection was supposed to be afforded by these pipes being trapped, but the traps were very defective, some being entirely

unsuited, and all being liable to two great sources of inefficiency—one was, that should the trap be connected with the water-closet, every time the closet was flushed the trap was emptied, and unless fresh water was thrown in, it was in immediate connexion with the sewer. The other source of inefficiency was, that water would only maintain its defensive properties for a certain time; the moment it became saturated with sewer gas, it no longer prevented the gas escaping. The result was that many houses in the best localities received into them constantly an immense quantity of sewer gas. The paper they had heard read that night, and such like papers, together with the history of such outbreaks as that in the school at East Sheen, near London, seemed to prove beyond any reasonable ground for doubt that not only pneumonia, but enteric fever and other specific affections, may be caused by the inhalation of sewer gas. He had had an opportunity of observing something of that kind within the last two years in the case of a house where, to his personal knowledge, there was a pipe in connexion with a sewer, but indifferently trapped. He had treated a boy, aged three years, for enteric fever; a girl, aged between six and seven, for pneumonia; and the lady of the house for a most intractable inflammation and ulceration of the throat—a tonsillitic and pharyngeal affection extending to six or seven weeks; and he was disposed to attribute the origin of those affections to the inhalation of sewer gas.

DR. HENRY KENNEDY, who had now taken the chair, said the meeting would go with the authors of the paper as far as this—that anything which had a tendency to derange the health of the community would leave them open to disease, but whether it would leave them open to what they had described as pythogenic pneumonia was questionable. Pneumonia exhibited itself under a variety of forms. He had seen it, for instance, where the upper lobe of the lung was the part attacked, and he had seen upwards of twenty cases of that kind in one month. Again, it would become epidemic, and attack only one side. He had seen the disease also exhibit a very remarkable form of crisis. Some authors thought that nothing but fevers would exhibit the crisis phenomenon. He had seen pneumonia where crisis was the rule. At a certain stage of the disease a most profuse perspiration would take place, frequently attended with raving and a high pulse, and next day the pulse would be down to the normal standard. It was a long time since he had seen a case of that kind. Some of them might recollect a curious epidemic to which Sir Dominic Corrigan gave the name of “blue pneumonia.” There was this peculiar circumstance connected with it—there was very little pleuritis, which was an exception to the general rule, and the amount of lymph poured into the lung was exceedingly small. The lung was literally solid, and it was blue. This affection was not confined to

children. He remembered having directed Dr. Grimshaw's attention to certain cases of pneumonia in which he could indicate that they would end in typhoid fever, and the moment the typhoid fever occurred the pneumonia rapidly disappeared.

DR. GRIMSHAW said the observations of the Chairman carried out the views expressed in the paper. The statement that pneumonia presented itself under a variety of circumstances and different forms, was what he and Dr. Moore affirmed, and in their paper they endeavoured to distinguish what was the particular group of cases, or one form of the disease which they believed arose under these particular circumstances. Not only did the Chairman point out to him the connexion of fever and pneumonia, but he was the first person who called his attention to the fact that pneumonia increased in the summer time, and he had been watching it ever since, and it certainly culminated in a very considerable epidemic last year, when there was the greatest prevalence of the disease he had noticed during the eleven years he had been connected with an hospital. He should wish to know the time of the year in which the epidemic of the apex of the lung occurred. [The CHAIRMAN.—I think it was in spring.] As to the blue pneumonia, it was not improbable that if they had an opportunity of examining more fatal cases, they might have found them to resemble it in some measure. They were generally characterised by not being complicated by extensive pleuritis. The presence of pleuritis was more marked by symptoms than by any physical signs. He believed that in those cases where the pain was not a very important symptom, the pleuritis was very slight. Pleuritis was not often observed in connexion with the form of pneumonia which they had been discussing. The pneumonia in connexion with typhoid fever was very remarkable. Since this paper was written he had had a series of cases like those described in the paper. Two cases arose in stables in a particular locality, and two other cases of a similar kind came in from another place, but so closely connected with the former that he believed they had the same origin. From the increase at present of the form of pneumonia described in the paper, it appeared not improbable that a repetition of the epidemic of last year was about to occur. Cork-street Hospital was filled with these cases last year, so as to attract particular attention at the time, and in Stevens' Hospital there were a great many cases of the same kind. He had fifteen cases at one time between the two institutions. They came from the same localities, and presented the character of an epidemic. Death was rare, and the disease did not go through all the stages, which were typical of true pneumonia, as Trousseau called it. Modern works did not recognise this particular form of pneumonia, and in their paper they had endeavoured to distinguish it and to give it its separate place. With regard to treatment, the

influence of quinine in this disease was very remarkable, and pointed, to a certain extent, to its miasmatic origin. He had never found quinine in the pneumonia of winter as useful as in the pneumonia of summer, but in the latter it was most efficient. It appeared to arrest the disease, which, it was needless to say, was an uncommonly rare thing.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-SEVENTH ANNUAL SESSION.

Saturday, 10th April, 1875.

LOMBE ATTHILL, M.D., President, in the Chair.

DR. MACSWINEY exhibited an ovum of about the eighth or tenth week of pregnancy, which was expelled on the previous morning, with great hæmorrhage, from a lady who had had ten children. It was expelled whole, and he was given to understand, by those more experienced in these matters than himself, that an ovum being expelled whole was rather a rare occurrence. The hæmorrhage was so great that he was alarmed for the safety of the lady. Upon cutting through the different layers of the ovum, dividing the decidua and chorion, and coming down to the amnion, he noticed half an inch in thickness of coagulated blood interposed between the decidual membrane and the villi of the chorion, and this was, no doubt, what was termed apoplexy of the decidual membrane. The bag of the amnion was clear, pellucid, and contained the embryo unbroken. The remains of the umbilical vesicle were plainly to be seen, occupying a space between the amnion and the chorion, and there was also to be seen proceeding from the umbilical vesicle the long duct which led into the umbilicus of the fœtus.

Report of a Case in Midwifery Practice. By S. M. MACSWINEY, M.D., M.R.I.A.; Physician to Jervis-street Hospital, &c.

EARLY in March, 1874, a newly-married young lady was brought to my house to consult me. At that time she complained as follows:—She felt, she said, very weak and miserable—and, in truth, she looked so, as she was extremely pale and delicate in appearance. She told me that her appetite for food was well-nigh gone, that she was sleepless at night, and very nervous at all times. She referred her chief complaint, however, at this time to her urinary system. She had a very distressing pain, almost constantly, in the region of the bladder, and she had no control over the action of that viscus. Her water came away at intervals, quite suddenly, and without her knowledge or control. This occurred both by day and by night, but chiefly by day, and annoyed and depressed her very much. Its first occurrence dated from a period of

about two weeks previous to her consulting me. The affection was daily becoming more troublesome. I ascertained that she had not menstruated for the last two months, and it was, therefore, clear that she might be pregnant. There was nothing, however, available, in the way of evidence, at this early period, to enable me to determine, with certainty, this point; it was, accordingly, left for future solution. My present duty was to endeavour to alleviate the troubles which her distressing state brought her. For this, I shall merely remark, she took such remedies as experience suggested. As time passed the probability of pregnancy became greater, and I now looked forward with some confidence to the period when the fœtus would have ascended from the bony pelvis as the time when, most probably, an end would be put to her vesical sufferings. These latter had not, indeed, been much benefited by the treatment employed; and they continued a source of constant uneasiness and misery until a little better than four months after her last catamenial period, when they as suddenly came to an end as they had suddenly appeared. This event was coincident in time with a marked enlargement of the abdomen, and the fact of her being pregnant was soon after fully verified. Her general health was now soon completely re-established, and nothing further worth recording occurred until her labour commenced. This event happened in November, 1874, at the full term, or very nearly so. The labour was tedious, and shortly after she entered upon the second stage, meconium, in large quantity, came away. The presentation could not, as yet, be definitely made out, but, as may be supposed, I more than suspected its nature, and, in fact, prepared the attendant nurse and the family for a "breech" case. When some further time had elapsed, and that but little progress had been made in the labour, whilst her general state had become somewhat exhausted and unsatisfactory, I called for a consultation, and, at my request, Dr. Atthill saw her with me. He conclusively established the fact that the presentation was, as had been previously suspected, a "breech," and he advised that the lady should still be left to her own exertions for some hours, when, if no decided progress should then have been made, instrumental or other necessary aid might be afforded her. Some time after this consultation the pains came on pretty effectively; the breech was advancing slowly, but still advancing, nothing indicating any danger to be imminent had occurred, when, after a pain, the lady resting quietly and seeming to be dosing, I heard an incoherent sentence uttered by her, in a hurried way and altered tone of voice; this, again, was quickly followed by a distressed gurgling noise, and immediately she was convulsed in a truly frightful manner. The scene at this moment—the lady writhing in fearful spasms, which distorted her face; the attendant woman rendered useless to assist by terror; and a powerful uterine contraction coming on whilst the convulsion was still at its

height—was one not often met with and not soon forgotten. Unhappily this fit, there was good reason for knowing, was not due to any transitory disturbance of the central organ of the excito-motor nervous system, from irritation in a distant organ such as the uterus, but was only the recurrence of an epileptic attack of which she previously had had several seizures. It was followed, on the present occasion, by violent maniacal disturbance, which I immediately treated by the free exhibition of chloroform by inhalation. This proceeding, I may remark, had a magical effect in allaying the delirious excitement which agitated the patient. It may be right to say that there could be no mistake as to the nature of the attack; it was not eclampsia. There was not, nor had there been at any time, albumen in the urine, neither was there dropsy in any part of the body. There was no continuity nor prolonged duration in the convulsion; a single violent but short attack came on, and there was no recurrence. And, finally, there was, as has been just stated, a history of previous similar seizures before marriage.

Desiring, now, to effect delivery as soon as possible, I again sent for Dr. Atthill for consultation. He thought the forceps might be tried, although he doubted if we should succeed in that way. Accordingly we attempted to effect delivery by means of them, but they slipped, and we had to abandon that mode of emptying the uterus. I next essayed to bring down the pelvis with the aid of my fingers, but without success, as it was too distant to allow me to hook a finger round a limb. In this emergency Dr. Atthill took up the band out of which the patient had been "pulling," and which consisted of a soft cotton (what is called "stocking") woven texture, and, after some trouble, very neatly and skilfully carried it through the fenestrum of one of the forceps blades, over the thigh, catching it at the other side by a long dressing forceps, and bringing it down and out. A complete soft fillet was thus wound round the limb. Traction being now made upon this band by Dr. Atthill, the trunk was speedily and easily delivered: But the head seemed to be caught somewhat, and its extraction gave a good deal of trouble. Dr. Atthill being rather fatigued—not having, indeed, as yet fully regained his strength after his recent serious illness—I again took charge of the case to effect complete delivery. On accomplishing this, the head, notwithstanding that every effort was made to prevent its delivery doing mischief, ruptured the perineum to a considerable extent in its passage out. Nothing further was done that evening beyond attending to the immediate and ordinary requirements of a woman recently delivered. But I examined the tear in the perineum more particularly the next day, and was a good deal concerned to find that it had quite extended to beyond the anus. I anxiously explored the state of the sphincter, and was not a little relieved to find that it was safe and intact. The rupture had taken, fortunately, a very unusual and curved

course—running, first, directly to the verge of the anus, and then, instead of tearing the sphincter, turning aside, and extending outwards and backwards, towards the angle of the ischium, fully an inch beyond the extreme limit of the opening of the bowel. It was very extensive, and had, in truth, a most unsatisfactory and unpromising look; and yet—with no other treatment save absolute rest in bed and the use of a carbolic lotion, it quickly united, and got perfectly well in a fortnight.

The lady made, in other respects, a good recovery, and both she and the baby are now quite healthy and strong. She has had no recurrence—as yet, at least—of the “fit,” as far as I know.

The case which I have now shortly related affords, I submit, a good example of several of the difficulties sometimes incidental to the state of utero-gestation and delivery, and for which the attendant has to be prepared. These difficulties might have no terrors for the experienced obstetric physician, but they would, probably, not a little embarrass the junior practitioner. To sum them up briefly, in the progress of this case there was met with—1st, the great vesical irritation and incontinence of urine, in the earlier months of pregnancy. This morbid state was, in the absence of a certainty of pregnancy, very puzzling, and very difficult to manage with satisfaction to all parties concerned. Subsequently there were encountered, at the actual confinement—2nd, the abnormal presentation; 3rd, the epileptic attack; 4th, the difficulty of effecting delivery; and 5th, the extensively ruptured perineum.

The PRESIDENT said:—The case related by Dr. MacSwiney is, in several respects, interesting, specially so with reference to the occurrence of true epileptic convulsion in labour. He had several times had epileptic patients under his charge, but this was the first occasion in which he had seen an epileptic patient having a fit during labour. Epileptiform convulsions were common enough, but patients subject to epilepsy seemed to have an immunity from a seizure during labour. He believed there was no better treatment for puerperal convulsions than the administration of chloroform, and it appeared that in this case chloroform had produced a good effect. Cases of breech presentation were sometimes very troublesome. In Dr. MacSwiney's case the patient had been in labour twelve hours before he (the President) saw her; the os was not then fully dilated, and the breech was above the brim. There being no urgent symptom, he advised that time be given to see what nature would effect, but the epileptic fit coming on, Dr. MacSwiney rightly wished delivery to be effected, and suggested the use of the forceps. He (the President) had never seen the forceps successfully used in a breech presentation; but in this instance, at Dr. MacSwiney's request, he tried them, and they were, as he expected, perfectly useless; they slipped off. Here there was a case where delivery was demanded on

account of the occurrence of convulsions. The treatment of bringing down one limb was out of the question, the breech being low down in the pelvis. There were three methods by which, under the circumstances, delivery might be effected—first, by traction on the thigh with the fingers; second, by the use of the blunt hook; and, third, by the fillet. He was unable to effect delivery by traction with the fingers, and Dr. MacSwiney, who also tried it, failed. As to the blunt hook, he would never use it on a living child. It was a most dangerous instrument; he had seen it inflict serious injuries on the child, and he thought it ought not to be used unless under circumstances which rendered the birth of a living child impossible. He (the President) then decided to try the fillet; that was, to pass a loop round the thigh at its flexure on the abdomen. Fortunately in this case, the pelvis was roomy, and he was enabled to pass the cotton band between the thigh and abdomen, using for the purpose one blade of the forceps, and then pulling the band down by means of a pair of long dressing forceps; the rest of the operation was easily accomplished. There was very extensive laceration of the perineum. His own treatment in these cases was to put in two or three stitches at the time, and he had obtained good results from doing so; but, as was the case in this instance, there might be a considerable amount of union without any sutures being inserted. He thought the Society were indebted to Dr. MacSwiney for bringing this interesting case before them.

DR. J. A. BYRNE said the case was one of great practical importance, and such as any practitioner might expect to meet. He was surprised to hear of the forceps being used, not being able to see how it could be used in a breech presentation. These cases were very embarrassing where the pelvis was small, but where it was large there was generally not much difficulty. He had seen fracture of the femur produced by the use of the blunt hook, and therefore agreed with the President that it was an instrument which ought to be discarded. There were some cases in which they would not be able to give assistance by traction. In these cases Dr. Barnes recommended what he called "breaking up the wedge," or reducing the breech presentation to half a breech. He recommended that the patient should be fully chloroformed, and the hand of the operator put into the uterus, and one foot brought down. He (Dr. Byrne) had not tried the practice, but he meant to do so in the first case which came under his notice of a breech presentation which demanded interference.

THE PRESIDENT observed that in Dr. MacSwiney's case the breech was wedged in the pelvis, so that it was impossible to bring down a limb.

DR. KIDD said:—There are many points of great interest in this case.

The vesical irritation Dr. MacSwiney has described is not an unusual occurrence in early pregnancy, but the explanation of it is difficult. I have seen it in connexion with anteverted or anteflexed uterus. When a woman is suffering from anteflexed uterus, she is likely to suffer this vesical distress for a couple of months. I have seen it where there was an irritable ulcer on the os. I have also seen it where I could not attribute it to any flexion or irritation in the os, but where it appeared to be the result of some neurotic derangement. Where vesical derangement depends on anteflexion of the uterus, it may be relieved either by the use of a pessary, such as Graily Hewitt's cradle pessary, or by placing a pledget of cotton, saturated with glycerine, in the vagina. Where it depends on an irritable ulcer of the uterus, we must treat the ulcer, cauterise it, and destroy this great irritability of the surface; but, in many cases, it resists all treatment, and nothing will overcome this vesical irritation but time. Sedative suppositories placed in the rectum sometimes afford great relief; but all treatment often fails. The next point is the breech presentation. I do not know that there is any connexion between that and the vesical irritation. The epilepsy is unusual. It is very unusual to see epileptic fits occurring during labour. It is difficult to distinguish between epilepsy and epileptiform convulsions in a puerperal woman. We very rarely meet with epileptic fits in labour in epileptic patients; and it is almost laid down as an axiom in many of our standard works that it does not occur. If we were quite clear that it was epilepsy, there might not be the urgent need for emptying the uterus. If we have convulsions coming on in labour, the best practice is to empty the uterus as soon as we can; but, if it were a true epileptic fit, I do not see that we should be so urgently called on to empty the uterus. I do not know, however, how we can draw the distinction between the epileptic fit and the epileptiform seizure. Dr. MacSwiney alludes to the absence of albumen in the urine; but Dr. More Madden has brought forward several cases where epileptiform fits had occurred without any albumen being found in the urine. Braxton Hicks, also, brought forward cases where there were numerous epileptiform convulsions and no albumen, and he went so far as to throw out the suggestion that albumen was the result of the convulsion, instead of being the cause of it. I made it a point, for some time, at the Coombe Hospital, to examine the urine of convulsive patients, and I have the record of many cases where we had true puerperal convulsions without any albumen being found in the urine. The next point is as to the difficulty of extraction. When the breech is high in the pelvis, and the uterus not much contracted, the best practice is that of Barnes. If the breech can be pushed up before the hand, which can be very often done if the waters have not been fully expelled, then the best course is to break up the wedge or presentation by bringing down one leg. This I have practised

myself with success, on Dr. Barnes' recommendation. It not only lessens the bulk of the presenting part, but gives you full control over the child. I have never used the fillet, but I have used Churchill's forceps very beneficially when the breech was very low down, but the cases in which this is necessary are very few indeed. I quite concur with the President in his observations as to the blunt hook. I have seen injury done by it, and I have never used it on a living child; but it is not altogether to be discarded in the case of a dead child. With regard to the laceration of the perineum, the best practice we can adopt is to bring the edges together at once; unless the patient be in a very unhealthy condition, it rarely fails to cause union. I have seen one case where it was a complete failure, but then the woman was in a dying state at the time, and did die very soon. Before death the stitches gave way, and the parts opened widely; but, as a rule, if the perineum be torn to the verge of the anus, if you bring the edges carefully together with sutures, you will obtain good results. You must be careful to insert your sutures deep enough, and I think that the material that is best for this purpose is either thread, hemp, or carbolised cat-gut. In my first attempt to bring together the lacerated perineum, I used wire sutures, but every time the nurse applied the sponge it caught in the points of the wires and caused irritation; and, therefore, I have lately used ordinary housewife thread. I also at first used the quill suture, but have not done so latterly. I find the simple interrupted suture will answer as well, and not give so much pain, and is made more quickly. In using the interrupted suture you must be careful to insert your sutures deeply, so as to bring together the inner margins of laceration as well as the cutaneous margins. The first suture should be inserted as close to the anus as possible, so as to control the action of the sphincter; the second at the middle of the laceration, and the third at its vaginal extremity; and, with the exception of the one case I have alluded to, I have never seen this fail in producing adhesion.

DR. MACSWINEY briefly replied. He said he had given chloroform in this case for the purpose of calming the frightful excitement present, and also of preventing the recurrence of the attack. When they were endeavouring to effect delivery, he administered chloroform a second time, the lady having again become greatly excited, and she was under chloroform when the delivery was effected. The vesical symptoms indicated want of control and not incontinence of urine. She had a distressing pain in the region of the bladder. The fit was an epileptic seizure; she was subject to epilepsy pure and simple. There was, in his mind, a marked distinction between an epileptic fit and a puerperal convulsion. In addition to the absence of premonitory symptoms indicating eclampsia, the suddenness of the fit and its non-continuance would in itself

clearly indicate that it was not a puerperal convulsion. It was not usual that one puerperal convulsion should occur and no more. His opinion in this case was that the patient ought to be delivered, and then it was that he urged the use of the forceps. It was agreed that delivery could not be effected by drawing down a limb, and he could not see any objection to attempt to apply the forceps. With regard to the rupture of the perineum, it did not occur to him to examine it minutely at the time. On the next morning, when he did make an examination, he found it had progressed so favourably by non-interference that he determined to let it alone; and he could assure the Society that no operative proceeding could have been more successful, for the result of the non-interference had been the most absolute union that could be desired.

Case of Ovarian Tumour (Unilocular Cyst); Ovariectomy performed. By HENRY GRAY CROLY, F.R.C.S.I.; Senior Surgeon, City of Dublin Hospital; Member of the Council of the Royal College of Surgeons, &c., &c.

I BRING this case forward, Sir, because, although I have not much to say on the subject, I think, as we are collecting statistics of ovariectomy, that fatal cases should be recorded as well as those that are successful. It is clear that we cannot arrive at any sound conclusion on the subject if pet cases only are recorded, and those which have not proved successful excluded from our consideration. It is for that reason I desire to lay before the Society the details of a case of ovarian tumour recently under my care, in which the operation of ovariectomy was followed, unexpectedly, by a fatal result. The following history of the case I take from the notes of my former apprentice Dr. Hearn, L.R.C.S.I.:—

J. O'K., aged fifty, residing at 61, Watling-street, was never married; always enjoyed good health up to about seven months ago (except a slight pain in her left side, about fifteen years ago, which left her in a very short time). Menstruation commenced when she was fourteen years old, and ceased three years ago; was always quite regular, both as to time and quantity, the catamenia lasting four days, and unaccompanied by any pain. She was admitted to the hospital on the 3rd Nov., 1874, and stated that about seven months previously she felt, for the first time, a darting pain in her left side, accompanied by a swelling, which has been gradually increasing up to the present. Three weeks before admission she was suddenly seized with violent pain in the left side, of the same darting character, which extended over the front of the abdomen to the right side. Since then she has had a recurrence of pains extending over the abdomen, coming on generally during sleep.

On examination a large tumour was found occupying the entire front of the abdomen, dull on percussion in front, and clear at the sides

towards the lumbar regions; fluctuating, and with numerous varicose veins ramifying on its surface.

28th.—Was examined, per vaginam, by Drs. Kidd and Atthill, when a small polypus was discovered protruding from the os uteri, which Dr. Atthill removed. The uterus was normal in length and position. The patient was also seen by Drs. Churchill, Denham, and many other practitioners in this city. The following were the measurements:—At umbilicus, 35 inches; from umbilicus to ensiform cartilage, 6 inches; from umbilicus to pubis, 8 inches; from ensiform cartilage to pubis, 14 inches; from right anterior superior spinous process to umbilicus, 9 inches; from left anterior superior spinous process to umbilicus, 9 inches. The measurements were taken a month or six weeks afterwards, and showed an increase. They were as follow:—At umbilicus, $35\frac{1}{2}$ inches; from umbilicus to ensiform cartilage, $6\frac{3}{4}$ inches; from umbilicus to pubis, 8 inches; from ensiform cartilage to pubis, $15\frac{1}{2}$ inches; from right anterior superior spinous process to umbilicus, $9\frac{1}{2}$ inches; from left anterior superior spinous process to umbilicus, $9\frac{1}{2}$ inches.

The patient, on admission to hospital, was carefully examined as to her general health. This examination was made partly by myself, and partly by my colleagues, and we decided that she had no organic disease to contra-indicate operative interference. She had not a strongly acting heart, which was probably the only weak point. It was decided that she should get the chance of the removal of the tumour, which was causing her much distress, and preventing her from taking any part in household duties. Accordingly, on the 2nd of February, I performed the operation, in the presence of a large assembly of practitioners, in a ward of the hospital which had been carefully prepared for the patient. The incision, which was four inches long, was commenced midway between the umbilicus and the pubis in the median line, and extended down to within an inch of the pubis. *My hand was not at any time introduced into the cavity of the abdomen.* I passed Sir Henry Thompson's sound beneath the abdominal parietes, and broke down a few delicate anterior adhesions. I punctured the cyst, and drew off half a bucketful of fluid. The cyst was believed to be single, but at the time of its removal it presented an appearance which, at first sight, made it look like a double cyst—in reality it was unilocular. There was scarcely a drop of blood lost. I was obliged to stop once during the progress of the operation, owing to sickness coming on from the ether which the patient inhaled. The tumour having been removed, the pedicle was secured with a clamp, the actual cautery applied, and the wound was closed with carbolic sutures passed from within, and the patient was dressed in the usual way with flannel and wadding.

The operation was thus performed on Saturday morning, the 2nd

of February, between ten and half-past ten o'clock. For the first eight or ten hours the patient seemed to suffer so little from the operation, that one looking at her could scarcely think that any operation had been performed. As I said to several practitioners who inquired about the patient, "There is only one fault to find with her, and that is, that she is too well;" for my experience is, that if patients are apparently very well immediately after operation, they do not do as well ultimately as those who suffer more severely from shock in the first instance. Opium was administered in moderate doses. She took ice and chicken-broth, and went on well until Saturday night, having been carefully watched by Dr. Hearn, the resident pupil, and the dressers. The urine was drawn off regularly. On Sunday the patient was apparently going on well. The only change to be observed was, that the pulse was quicker—a symptom that I should have liked to have occurred a little earlier. On Sunday I was anxious about her, but she had no abdominal tenderness, no jerk in the pulse.

On Monday morning, at three o'clock, I was sent for to see the patient, and found her with a very quick pulse, and râles through the chest. I dry-cupped her on the back of the lungs; there was no pulmonary congestion; her temperature was so good that I had not to employ hot jars; there was a slight distension of the abdomen from flatus. I passed up O'Beirne's long tube, and drew off the flatus without otherwise interfering with the patient. I further observed that her pulse was getting very rapid, and her breathing quick. She gradually sank from that time, the pulse having become so rapid that we could scarcely count it, and at 3 o'clock p.m. on Monday she died (her intellect being perfectly clear), just 65 hours after the operation. A *post-mortem* examination was made, but there was nothing found to explain the death. There was no hæmorrhage into the abdomen; there was only a trace of peritonitis, there being only as much injection of the vessels as would show that there had been an operation, but no effusion of lymph. The heart and lungs were sound. The *post-mortem* examination proved the accuracy of the diagnosis—namely, that the disease was in the right ovary, although the patient said the tumour commenced at the *left* side. There is one other point I should have mentioned. The *bruit de cuir neuf* was marked at the right side over the region of the ovary, and that was the only place where adhesions were found to exist at the time of the operation. In the medical certificate of death the cause registered was, "secondary shock following ovariectomy, 65 hours." I have performed some hazardous operations from time to time, but I never undertook one with such a deep feeling of responsibility as I entertained on this occasion. The patient was fully impressed with the serious nature of the operation, but she wished to get a chance of her life. I was greatly disappointed at the result, for when

I cut down on the tumour, and the cyst turned out with such ease, I thought it was a case likely to do well.

The PRESIDENT complimented Mr. Croly on his candour and courage in bringing forward an unfavourable case of ovariectomy. In common with some other practitioners, his opinion had been asked as to the advisability of operating in this case, and he was present at the operation. In his opinion there could not have been a more justifiable case for operation. The patient would have died before very long if the tumour had not been removed. It was only another example of the uncertainty of the results, for he had seen the operation performed where everything seemed unfavourable, and yet the patients recovered. In this instance the operation was performed with the greatest possible skill and care. No doubt ovariectomy was an operation that ought not to be undertaken without a full appreciation of the responsibility incurred, as it was one that could only terminate in either of two ways—perfect recovery or death. In the present instance that had been done, and the patient had been put in full possession of the dangers of operation, and yet wished it to be performed.

DR. KIDD.—Along with you, Sir, I had an opportunity of seeing this case, and I was present at the operation; and, with Mr. Croly, I was greatly disappointed at the result. The operation was most skilfully performed, and the tumour came away without any difficulty. The hand was not introduced into the cavity of the peritoneum—a matter, I think, of considerable importance. Mr. Croly, on several occasions, asked me about the case. I believe the opinion I uniformly expressed was—that it was a case in which, considering the rapidity of the growth of the tumour, and the continuance of that growth, death was inevitable if the operation were not performed. There are a few cases of ovarian disease where the tumour does not grow rapidly, and in which the life of the patient may last for a very considerable time, she being only inconvenienced by the bulk of the tumour. In a case of that kind my own feeling is that we should not recommend an operation; but here was a case where the tumour had attained a very considerable size in a few months, in which the woman's health was sinking under it, and where all our experience indicated that in a very few months the case would terminate fatally if the tumour were not removed—so that, in my opinion, the operation was one that was perfectly justifiable. At the same time I felt the woman was a bad subject for an operation, and that was Mr. Croly's opinion too. Though there was no disease of the chest or kidneys, yet her aspect and condition were such that made the case not a desirable one for operation, and the opinion I expressed, and which I believe was identical with Mr. Croly's, was—that if the woman, having

all the circumstances laid before her (which was done), elected to have the operation performed, it was right to do it. It is a very remarkable fact that cases in which the tumour comes out most easily are not the most successful ones. I have seen a case where the tumour came out as easily as a glove comes off the hand, and in which the patient began to die on the table. I remember being present at an operation performed by one of our leading surgeons in which that was the case. There was no adhesion, no solid matter. The incision was not more than two inches in length. The cyst was tapped, the fluid drawn off, and the tumour turned out with ease, and yet the patient never rallied, and she died in a short time afterwards. The first case of ovariectomy in this country died somewhat in this way. The woman was a patient of mine, on whom Dr. Clay, of Manchester, operated. She seemed to do well at first, but at the end of twenty-four hours she began to sink, and died, apparently, simply from secondary shock. That is, I believe, not an uncommon form of death in these cases.

DR. DARBY thought too much stress could not be laid on the points that should guide them in diagnosis. Some individuals having ovarian tumours might live for years, and it was a serious thing to undertake an operation in cases that might live for a long time without interference, but might die in a few hours after operative proceedings. He had three cases under his observation at present, where he knew ovarian tumours to have existed for upwards of twenty years, and the individuals were in perfectly good health at present, and likely to live for years to come. One was a patient in hospital, admitted twenty-five years ago. She went on for years with an enormous swelling in the abdomen, evidently an ovarian tumour. When Spencer Wells came to Dublin, he (Dr. Darby) was urged to interfere in this case by operation, and he asked his friend, Dr. Kidd, to examine the case. Dr. Kidd did so, and advised him not to operate, thinking that there was solid matter in the tumour. He acted on the advice, and the woman was not only in perfect health, but she was getting quite small, and one would hardly know she had a tumour at all. Another case was that of a lady, wife of a medical man, who was very bad some years ago. He was consulted about her, and thinking, at first, that it was a disease of the womb itself, he advised the husband not to meddle with it, and she was now in good health and getting quite small. There was another case of the same kind which he had asked Dr. Beatty to see, and he advised that there should not be any operative proceedings, and the woman was now getting small. At the time Dr. Beatty saw her she could not move from one room to another, but during the last twelve months he (Dr. Darby) saw her after she had driven twenty miles in a gig, and she was not in the least injured or fatigued by the exercise. With regard to rapidity of growth, the last

mentioned case was a remarkable example. The woman grew to an enormous size within twelve months. He had performed the operation of ovariectomy only once, and it was unsuccessful. It did not appear to him at the time that there was any novelty in the case to justify him in bringing it under the notice of the Society, but he regretted now that he had not done so. The patient was a small woman, but was upwards of sixty inches in girth. Dr. Beatty and Dr. Robert M'Donnell saw her, and, in talking over the matter, it was decided that if the adhesions were extensive they should be content with tapping. However, when the fluid contents, filling two washing tubs, were evacuated, the adhesions were found to be very extensive. Dr. Beatty was in favour of proceeding with the operation, and, yielding to his experienced judgment, he proceeded to break down the adhesions and remove the sac. The woman sank in forty-eight hours, and evidently died from the effects of the shock.

DR. J. A. BYRNE said that some members might remember a woman suffering under ovarian disease, who, some years ago, used to go about the town hawking articles for sale. She had a very large ovarian tumour, and at intervals it burst spontaneously into the vagina, when large quantities of fluid would be discharged, and the abdomen would become small, and then it would re-fill. The three cases of spontaneous reduction of the tumour were mentioned by Dr. Darby. He never knew any case in which it had occurred except the one he had just mentioned. In that case the abdomen would grow very large, and suddenly a discharge would take place through some opening in the vagina. He could not find where it came from, but probably there was some fistulous opening.

The PRESIDENT said, with reference to the escape of fluid, per vaginam, that a case had come under his notice of ascites from cardiac disease. The patient was apparently dying, and was of enormous size, having anasarca of the limbs, as well as dropsy of the abdomen. On visiting her one day, he found her sitting up in bed, the swelling having entirely disappeared. She stated that on the previous day she had been seized with severe pains of an intermittent character, very like labour pains, that a large quantity of fluid was after a time discharged per vaginam, and that immediate relief followed; the fluid, however, continued to trickle for some days. After a time the fluid accumulated again, and the same phenomena occurred a second time, she being then a patient in the Meath Hospital. It occurred, also, a third time, and she then died; and, on a *post-mortem* examination, not the slightest opening into the vagina could be discovered. He thought the fluid must have escaped through the Fallopian tubes.

DR. KIDD.—As to the diminution of ovarian tumours, it is a matter of rare occurrence, and it would be very interesting if Dr. Darby would place on record those three cases to which he has referred. One of them he allowed me to see, and as far as my recollection serves me it was a fibro-cyst of the uterus. Now it is common for a fibro-cyst of the uterus to diminish in size as the patients advance in life; but I am not aware that it has been observed that ovarian tumours diminish. I remember, some years ago, the physician of the Morningside Asylum of Edinburgh placed on record a case which underwent remarkable changes in size, and without any apparent reason, but that is almost the only case of the kind I remember. I myself published, in the *Dublin Quarterly Journal*, an abstract of that paper, and drew attention to the case as one of very unusual occurrence.

The Society then adjourned.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Gangrene of the Lung.—DR. HAYDEN said: During the present session some cases of gangrene of the lung have been brought before the Society—one of them at our last meeting by my colleague, Dr. Nixon. I purpose now to exhibit another example of gangrene due to embolism of the pulmonary artery. The patient was a woman thirty-three years of age. She was confined on the 29th of October. Three days after her confinement she imprudently went out, and in the evening she had a rigor. She then complained of pain in the chest and bad cough. She was admitted to hospital on the 18th November. I saw her on the next morning, and her condition was then as follows:—She was remarkably pale, had a puffed and pasty aspect, and was suffering from orthopnoea and a constant and very distressing cough. The pulse was rapid, and she complained of very great pain in the chest. The heart acted tumultuously, and there was a reduplication of the second sound—the only cardiac phenomena that I observed. Her sputa were blood-stained. The urine had, previously to her admission, been in defect, but it was now in full quantity, with a specific gravity of 1020. It was alkaline and smoky-looking, contained a trace of albumen, and only a small quantity of granular deposit. There was a quantity of triple phosphates, also some blood corpuscles. On the evening of the 19th it was manifest there was congestion at the base of the right lung. The crepitus was distinct, and there was slight dulness. The temperature was 98·4°, and the pulse weak. On the 21st the skin was hot, and dry, and on that day she complained, for the first time, of pain in the left leg. Slight œdema of the foot and the entire left limb followed, and its sensibility became so acute that she could not bear to have it touched. On examination of the groin I detected hardness, but it was not of that feel that would lead to the conclusion that the femoral vessels were engaged; the lymphatics, however, felt tense and rigid under the finger. There was slight tenderness in the supra-pubic region. The symptoms became occasionally worse, and then again they underwent improvement. There was now, manifestly, effusion into the left knee-joint, and three or four days later there was decided fœtor of the breath, and the sputa exhibited the peculiar gangrenous appearance of froth mixed with brown

flakes. She died on the 24th December, quite worn out. For some days before her death I was not enabled to make a perfectly satisfactory examination of the chest, she was so extremely sensitive to pain. I did examine it, however, sufficiently to be able to declare to the class that the following physical signs existed—viz., decided dulness of the lower half of the right side; respiratory sounds almost *nil* in the early stages, and subsequently a crepitant r le, which became louder and coarser in the progress of the disease; finally it became a gurgle, but there was no metallic sound. On *post-mortem* examination there was found some effusion into the peritoneum. The left femoral artery, two inches below Poupart's ligament, was of a crimson tint on the internal surface; elsewhere the lining membrane of both vessels was normal. The uterus was not examined. There was some effusion in both pleural cavities. The liver was found to be enormously enlarged, fatty in a high degree, and adherent to the diaphragm. I examined a portion under the microscope, and found it to be in the most advanced stage of fatty degeneration. The heart presented nothing special; it was not fatty. The kidneys were fatty, but there was no indication of that condition during life. The right lung was firmly attached to the diaphragm, and in its inferior lobe there was a large gangrenous cavity, over which the pleura was opaque and much thickened by antecedent inflammation. The walls of the cavity presented a rugged appearance, and it was traversed by a number of fibrous bands, including blood-vessels. This cavity communicated with the bronchial tubes. At first I could not arrive at a clear view of this case, but after brief observation and reflection I was able to come to a positive conclusion—namely, that there must have been an embolus detached from one of the uterine veins or from the femoral vein, carried to the right ventricle, and finally impacted in the pulmonary artery, where it became the cause of infarction, then of inflammation, and finally of gangrene. The woman had been previously healthy, and had not been addicted to drink. On laying open the pulmonary artery carefully, my clinical clerk (Mr. Davis) found a plug, which will be seen in a tertiary branch of the right pulmonary artery, running right forward to the gangrenous centre. The other branches of the pulmonary artery are free. The tissue around the abscess is soft, but the gangrene is circumscribed.—*January 9, 1875.*

Cerebral Tumour; Glioma.—DR. YEO showed the brain of a woman, aged twenty, who for the preceding five years had been constantly under Dr. Gordon's observation. Her illness dated from a fall from a form, which happened at school, and caused head-ache. A week after this she had an epileptic fit, for which Dr. Gordon was consulted. She continued to have fits every now and then, which increased in severity till they materially affected her health, and she became so stupid that her

removal from school became necessary. She remained at home for two years; the stupidity greatly increased, and the intervals between the fits became shorter. About four months ago she was admitted to the Whitworth Hospital. At this time she generally had an epileptiform fit about once a week, which, about every third week, was much more severe than those immediately preceding.

The disease progressed without any sign of improvement, the fits becoming more and more frequent, till finally, at the end of two months, she was in the habit of having about eleven or twelve seizures each night. Her sight commenced to fail, and she rapidly became quite blind about a fortnight before her death. The ophthalmoscopic examination of her eyes, however, which was made by Dr. Fitzgerald, showed not a trace of congestion papilla or choked disc. Her memory now became so bad that she could not recollect the simplest prayer, and she gradually sank into a kind of coma, which was frequently interrupted by slight convulsive seizures. During the latter part of her existence she had suffered from intense and frequent vomiting, and constant obstinate constipation.

Autopsy.—The cranium and its contents seemed well developed. The dura mater appeared normal, the pia mater engorged. The convolutions on left hemisphere were flattened, and when the brain was removed the left side seemed bigger than the right. On opening the brain a tumour about the size of a small orange was found to occupy the anterior part of the left hemisphere, in the centre of the nerve-tissue, bulging into the lateral ventricle. The long axis, placed antero-posteriorly, reached as far back as the posterior part of the optic thalamus, but did not implicate it. The outer side of the corpus striatum was engaged in the morbid mass, and the rest of it seemed softened and degenerated. There was no part of the deeper brain tissue in the anterior lobe which did not appear more or less altered by the tumour. On section it was found to be badly defined from the surrounding brain substance, its peripheral part being only distinguished from white brain matter by the microscope and by its greater hardness, which gradually increased towards the tumour till an almost cartilaginous density was reached. This hard part was brilliantly white, had no sign of vessels in it, and seemed to enclose a central portion, which was a semi-transparent, greyish, jelly-like substance, dotted over with many irregular red spots, which looked like points of hæmorrhage to the unaided eye.

The microscopic examination of its parts gave the following results:—The peripheral zone of the tumour was composed of nerve-tubes, pushed asunder by a considerable increase of the intervening neuroglia, which proliferated enormously, and appeared as beautifully fine, delicate, and elastic fibrillæ, forming a most exquisite meshwork, in the knots of which were here and there seen small granular nuclei. Towards the

deeper parts, where the hardness was greatest, there were hardly any nerve-fibres to be seen, the entire being a thick felt-work of neuroglia, entangling in its meshes a few small round cells. The central part of the tumour seemed to have undergone a kind of degeneration of the tissue, accompanied with peculiar dilatations of the vessels. With a low power (Hartnack, obj. 4, oc. 3) a loose irregular net-work of irregularly-tortuous and dilated vessels, with very thin walls, could be seen, all tightly packed with red blood corpuscles. The tissue around these seemed masses made up of very large cells of irregular shape, numbers of which were spherical and filled with coarse granules; others looked like enormous lymph-cells, and contained several nuclei. The soft material between these cells appeared homogeneous, and threw down a fine granular precipitate on the addition of acetic acid.

Dr. Yeo considered this to be a good example of glioma in the brain tissue, presenting its various stages of development, while the centre had undergone myxomatous degeneration.—*January 9, 1875.*

Fracture of the Skull fatal by Laceration of the Middle Meningeal Artery.—DR. BENNETT said: The individual from whom this specimen was taken was nineteen years of age. During the last summer he was engaged in drawing rubbish from a building undergoing repairs in a lane off Trinity-street. While removing the rubbish a scaffold-pole was detached, and, falling beside him, tumbled over so as to strike him on the side of the head. He was thrown by the blow against a heap of bricks. So far as the account of the injury went, therefore, he had been struck on both sides of the head; and in the absence of a distinct wound, we remain in doubt as to whether this fracture of the bone resulted from the fall or from the blow of the scaffold-pole. He was stunned, and recovered himself in a few minutes. His comrades gave him a glass of whiskey, which he vomited. The hour was between eleven and twelve. Immediately after recovering from vomiting he went away with his horse and cart to the stables at Townsend-street, more than half a mile from Trinity-street. He unharnessed the horse and put him into the stable. Nobody seemed to have come into contact with him for a couple of hours afterwards. After two o'clock his fellow-workmen found him lying in the stable, and, assuming that he was drunk, left him there. He remained in that state until five o'clock in the evening, and was then brought to Sir Patrick Dun's Hospital, where I saw him at six o'clock. He was then stertorous, with distinct left hemiplegia. The pulse was slow and feeble, and the respiration so slow that every now and then we thought the last breath was drawn. He was so clearly dying that the question of operative interference did not arise. His hair was removed, but we failed to determine the site of any injury which would account for the symptoms. There was a superficial abrasion on both temples, and on

examining the cranium all over the vertex we found a more or less distinct boggy feel; the specimen shows the cause of this, for the whole of the pericranium is infiltrated with blood, now coagulated by spirit. Taking the history of the case—the sudden insensibility, his recovering from insensibility with vomiting, the interval of consciousness lasting over an hour, his subsequent relapse into coma, and the left hemiplegia, it was clear that the cause of his trouble was intracranial hæmorrhage, probably from one of the meningeal vessels of the right side. He died in an hour after I saw him, and next morning I made the *post-mortem* examination. We found this condition of blood-effusion over the whole vertex and either temple. On raising the pericranium from the bone, we found in the latter a fissure, without any depression of either of its sides, passing downwards almost vertically through the temporal fossa, close to the line of the middle meningeal vessel of the right side. On raising the temporal muscle we could trace this fissure down to the margin of its fossa, but not beyond it. On sawing the skull across, we found a clot, one of the largest I have ever seen interposed between the skull and dura mater. The middle meningeal artery passed across the centre of the clot, being displaced from its groove in the bone along with the dura mater; at the part of the artery which corresponds to the intersection of the arterial groove in the bone, by the fracture, a rent in the arterial coats allows a probe to escape through the vessel; but the rent, both in the dura mater and in the artery, is confined to the parts of both normally in contact with the bone. From this opening the blood had escaped upwards, separating the membrane and bone without passing at all towards the base of the skull. The wound in the vessel is, therefore, as the specimen shows, close to the lower border of the clot, not opposite its centre or thickest part, as one would expect to find it if the separation of the dura mater was due to the pressure of the effused blood only. The centre of the clot corresponds rather to the centre of the fissure in the bone. This disposition suggests that the force which broke the bone detached the dura mater for some extent around the fracture, and that the blood collected in the region so stripped rather than that the blood escaping from the vessel was the cause of the stripping of the membrane from the bone. The clot compressed the brain, but no bruising or laceration of its structure had occurred.—*January 9, 1875.*

Primary Cerebral Fever.—DR. NIXON said: This is the brain of a boy admitted under my care to the Mater Misericordiæ Hospital on the 5th of November last. It was very hard to obtain any history of the case from the boy, as he seemed very stupid and taciturn. We, however, elicited from him that he had been a healthy strong boy up to probably six weeks before admission; that he awoke one night with pain in the

stomach and vomiting, and that the vomiting continued without cessation until the time of his admission. He became extremely emaciated, had a dry harsh skin, with cerebral macula well developed; severe head-ache, and his pulse was 96. The head-ache and vomiting continued—the latter was relieved on the application of a blister to the back of the neck, but he continued to complain of head-ache of an intermittent character, and we were told that at the time of the accession of pain in the head he screamed loudly. He continued to get weaker. He lay in bed with his head covered with the blankets, refused to take food or medicine, and to all appearance he seemed to be dying when I left off duty at the end of December. From the peculiar boat-shaped abdomen, the development of the cerebral macula, and the symptoms present, the case was looked upon as one of tubercular meningitis. Some time afterwards I learned that he began to improve, asked for food, took it voraciously, became strong enough to sit up in the ward, and was regaining flesh. However, after being up some three or four days he complained one day of feeling weak. He did not get up the next day; the weakness progressed; he became somnolent; the condition increased until his death, a few days after the first seizure of sudden weakness. Messrs. Harty and Davis made the *post-mortem* examination with care. All the organs were found to be healthy except the brain. The tentorium was intimately attached to the cerebellum, and the attachment had to be torn through with the finger; the two layers of the arachnoid were firmly bound together corresponding to the free margins of the longitudinal fissure, and in parts the arachnoid was covered with lymph, opaque and thickened. At the base of the brain occupying the great anterior subarachnoid space, there was a quantity of greenish lymph engaging the origin of the third nerve, passing down by the pons Varolii, and involving the origin of the fifth nerve. The extreme softness of the brain substance was most marked. The lateral ventricles were greatly distended with fluid.

Dr. Nixon considered the case interesting, as affording an example of primary cerebral fever developed without any connexion with tubercle. It appeared to bear out the view entertained by Trousseau as to the pathology of this affection, the essential nature of which is an inflammation and softening of the cerebral substance, often accompanied by a secondary meningitis.—*January 9, 1875.*

Injury of the Spine.—DR. T. EVELYN LITTLE exhibited the parts concerned in a case of fatal injury of the spine, and gave the following details: On Christmas evening a man, aged forty, who was intoxicated at the time, mistook the window of the room in which he was for the door, and, walking through it, fell a distance of about sixteen feet; in the act of falling he appears to have turned, as it were, a summersault in the air, alighting upon the back of his head, neck, and shoulders, and

thus doubling the head and neck violently forwards on the trunk. Next day he was admitted to Sir Patrick Dun's Hospital. At this time he complained of little or nothing to suggest the suspicion of serious, much less of fatal lesion of the spinal cord; his sole complaint was of considerable pain, tenderness, and immobility of the parts on which he had fallen. On examination, no unevenness or irregularity of the vertebral spinous processes could be made out; the head and neck were neither preternaturally stiff nor preternaturally mobile; there was no paralysis, anæsthesia, or hyperæsthesia; he had perfect control of the bladder and rectum. On the first day of the present year, when he came into my charge (having previously been under the care of Dr. Bennett), certain phenomena pointing to lesion of the spinal cord had developed themselves, having gradually supervened during the preceding couple of days. He had slight paralysis of the upper extremities, more particularly of the right side; his grasp of the hand was very feeble; he still complained of pain and tenderness of the regions previously mentioned; and I observed the presence of a symptom which I have several times verified in the early stages of injury of the cord high up—viz., a peculiar prominent flushing of the upper part of the body; the thermometer in the axilla, however, only registered a general temperature of 99° (F.); he had a cough which troubled him much, but which did not at first attract special attention, as he described himself as subject to old winter-cough, and the lungs were manifestly emphysematous. On January the 3rd he appeared to be *in statu quo* as to the paralytic symptoms, but the breathing had become progressively more and more oppressed, and his cough and difficulty of expectoration increasingly troublesome. On now examining carefully his mode of respiring, it was manifest that thoracic respiration was not being performed efficiently—in fact, the respiration was almost entirely diaphragmatic, and the patient complained of considerable pain and stitch of the lower margin of the thorax where the diaphragm springs from the ribs; he had also some pain following the course of the nerves running down the thighs; and for the last couple of nights he had been disturbed by frequent painful and severe spasms of the inner side of the thigh and of the calf of the leg. He still retained entire power over the bladder and rectum, and had no loss of power or of sensibility of the lower limbs; there was no elevation of temperature, nor any attempt at priapism. On the evening of this day he had a sharp attack of diarrhœa of bilious character. On the next day (January 4th) the dyspnœa and cough were still more troublesome, and he suffered much from accumulation of mucus in the bronchi, which he experienced extreme difficulty in expectorating. The pulse had remained perfectly quiet throughout, until this morning, when it became rather rapid—104 per minute. Although I had formed a most unfavourable prognosis of the case, I was, however, somewhat surprised at receiving a report of the patient's death a few

hours after my morning visit this day, which was the eleventh after the occurrence of the accident. He had died of gradually-increasing embarrassment of the function of respiration.

About six hours after death I made a *post-mortem* examination of the body. None of the organs presented any lesion worthy of notice, except those laid on the table, consisting of the whole of the cervical; and the upper part of the dorsal spinal column, with the contained medulla. A two-fold lesion of the spinal column, and of the corresponding regions of the cord, is to be observed.

Directing, firstly, our attention to the spinal column, the lesions of the hard parts discovered are such as we might have anticipated from the nature of the fall—i.e., such as would conceivably arise from a violent exaggerated antero-flexion of the neck. The first of them corresponds to the situation of the inter-vertebral space between the third and fourth vertebræ; the other to that between the *vertebra prominens* and the first dorsal vertebra. In the uppermost of these regions, the following lesions are found :—(1) there is a separation of the second inter-vertebral substance from the body of the fourth vertebra; (2) a small piece of the angle at the upper and anterior part of the body of the fourth cervical vertebra is broken off, and comminuted; (3) there is dislocation of the left articulation between the third and fourth vertebræ, the tip of the lower articular facet of the third being broken off, thus allowing the upper articular process of the fourth to pass backwards; on the other (right) side no such displacement exists, but there is considerable laxity of the joints, with stretching and laceration of the ligaments; and, finally, (4) there is a stripping up of the posterior common ligament from the body of the third vertebra, and a considerable clot of blood, in part discoloured, between it and the bone. The displacement between the bones here is very slight, obviously not producing any appreciable narrowing of the vertebral canal; the displacement is more marked on the left side—that of the dislocation of the articular process; whatever displacement, however, is present, is of the usual character—viz., the upper segment of the column has gone forward upon the lower. The lesions in the lower of the injured regions—between the last cervical vertebra and first dorsal—may be described in very much the same terms as those just detailed, but the amount of injury done is not so great; we have, that is to say, the same separation of the inter-vertebral substance; the same fracturing of the upper and anterior angle of the body of the first dorsal vertebra; the same stripping up of the posterior common ligament, with a blood-clot beneath; and the same laxity and stretching of the articular ligaments, with, on one side (the right), the breaking off of the tip of the inferior articular process of the *vertebra prominens*; there was, however, here, no dislocation; a similar displacement of the bones upon one another existed, but even more alight in degree.

Secondly, as to the spinal cord, it presents evidences of slight lesion at levels corresponding to both the bony injuries. Even before opening the theca, as the finger and thumb were carried with gentle pressure downwards, an appreciable "dip" was felt, indicating a limited area of softening of the contained cord, at the situation of the higher of the two injuries. On making a vertical section through all the length of the piece of the cord removed, a small oval-shaped patch of red softening, of about the size of a split-pea, was discovered occupying the interior of the cord at this site. This small area of disintegration involves the posterior cornua of the cord on both sides, more extensively upon the left. A precisely similar area of softening, holding a similar place with relation to the parts of the cord, exists at a point corresponding to the second injury of the column.—*January 9, 1875.*

Pendulous Tumour of the Mammary Areola.—DR. MACSWINEY said: I have the honour to exhibit to the Society a tumour which was removed, some eight or ten days ago, from the female breast. The subject from whom it was removed was fifty years of age. She was unmarried, and had ceased to menstruate six years previously. The history she gave was that about the very period when the menstrual pause occurred she noticed a wart immediately adjoining the nipple of the right breast. She observed that it gradually increased in size, and became ultimately pendulous, but as it gave her no inconvenience of any sort whatever, she did not consult any person about it—in fact, she never showed it to any one, but, on the contrary, carefully concealed it until she exhibited it to me. The reason she assigned for showing it to me was that about seven or eight weeks previously it commenced to be troublesome to her. It was not that it gave her pain, for there never was pain in the tumour or breast, but it became sore, and at the very terminal point of the bulb of the tumour an abrasion of the cuticle took place. This abrasion, when friction occurred between it and her dress in moving about, became sore, and from it, after a time, there exuded a muddy fluid, evidently serous in character, for it stiffened the linen wetted by it. She then became alarmed, and asked for advice. The tumour, when I saw it, was pendulous in character, altogether six or seven inches in length, including both the pedicle and the bulbous extremity, and the latter measured between five and six inches in circumference. The pedicle sprung from the areola and almost from the nipple of the breast, and included the greater portion of the nipple. It was of normal colour. Taken between the finger and thumb a considerable artery could be felt pulsating, not unlike that of the umbilical cord in a recently-born child; it was also about the diameter and size of that structure in its normal state. The bulbous extremity had rather a remarkable appearance; it was warty, irregular, fissured, indented, and of different colours—purple in one

part, grey in another part, and perfectly white in the deep indentations. From the abraded portions there exuded a disagreeable-odoured fluid.



Seeing that it was a pendulous tumour, that there was no pain whatever, and that it was, most probably, not of the class ordinarily called malignant, and, at the same time, fearing, if it were allowed to remain, it might degenerate into a condition of malignancy, Mr. Kane, of Harcourt-street, removed it, at my request, ten days ago. The most favourable results have followed the operation, and the wound is now nearly quite healed.

I hesitate to undertake to describe the particular class of tumours to which this growth belongs, impressed by the fact that the whole of that department of medico-chirurgical science is at present in a state of great confusion, and I shall therefore leave the determination of its special class to the pathologist. Viewing it, however, from the clinical point of view, I regard it as being of an innocent character—that is to say, I am clearly of opinion, from all the surrounding circumstances of the case, from its appearance, and from its history, that it is composed of adenoid tissue, and that it will never recur. In the *Dublin Journal* of 1847, the late Mr. O'Ferrall gave the history of a case, identical with the present one, of a pendulous tumour from the mamma; and the drawing with which his description is accompanied would most accurately represent the tumour I have just brought under notice. I shall conclude by expressing my opinion that this tumour is a hypertrophy of one or more of the scattered glands and sebaceous follicles which abound in the areola of the female breast.—*January 23, 1875.*

Stricture of the Colon and of the Pylorus; Colotomy.—DR. BARTON said: The specimen which I now exhibit illustrates a rare form of obstructive disease in the large intestine. It was taken from the body of

a man who was admitted to the Adelaide Hospital on the 24th of last September, with a history that for four weeks his bowels were totally and obstinately confined. He stated that about two months before the time of admission his bowels had become confined. He had taken medicine from time to time with some relief. Then he took a very active purgative medicine that acted freely, after which the bowels became obstinately locked up, and no medicine which he took acted. He was a feeble-looking old man. His belly was found very much distended, but was very slightly tender—the only pain was at the sides; and he bore pressure on the front without any sign of pain. He was able to take fluid nourishment freely. The pulse was weak and rather quick. He was restless at night, but in the day showed no sign of fever. On a careful examination of the abdomen we found the whole of the right side very dull on percussion, the caput-coli and the ascending colon presenting a dull percussion note, whereas on the other side it was clear; in the upper part of the belly there was tympanitic resonance. On examination by the finger, per rectum, no obstruction presented itself within reach of the finger. The long tube was employed, and passed up eighteen inches, and met with no obstruction. The treatment adopted consisted in the employment of enemata, and of calomel placed on the tongue. This was interesting in one respect, as the calomel produced a free evacuation within twenty-four hours of, however, purely fluid fæces. Nothing whatever of a solid character escaped. After this no further attempt in the same manner of treatment produced any such result. The question was—What was the cause of the obstruction, and where situated? I could not make any exact diagnosis as to the nature of the obstruction, but I thought that its situation was somewhere between the ascending and descending colon, inasmuch as along the whole of the descending colon there was a resonant note on percussion; that there the enemata had lodged and the tube passed up; whereas on the right side everything was dull, and the bowel was greatly distended. The symptoms became more urgent, and on the 27th there was a good deal of vomiting. As the intestines were greatly distended with flatus, it was suggested to puncture for the relief of this. Accordingly a fine trocar and canula were passed into the most prominent point, and a great deal of flatus escaped through the puncture, but no fæcal matter, with very great relief to the symptoms. The tension, however, remained much the same, vomiting continued, and his state became worse towards evening. On the 28th, four days after admission, it became evident that if not relieved very quickly he would die. I thought to put off the operation until the next day, but the symptoms became so much worse that at eleven o'clock at night the operation of colotomy was performed on the right side. The man was placed under the influence of ether, and bore the operation well.

The colon was reached without difficulty, and an enormous quantity of fluid feces escaped. Immediate relief followed, but the man gradually sank, and the following morning he died. On a *post-mortem* examination we found extensive peritonitis extending down into the pelvis and round into the intestine, but not where the trocar had entered. The wound in the colon was a transverse one, and it was sufficiently free to allow of a false anus being formed there. We found the obstruction was just at the turn where the transverse colon commenced. There the calibre of the gut was narrowed to the size of a number six or seven catheter. The canal had undergone an extraordinary change. If we examine the mucous membrane of the contracted part, we see it presents a rugose appearance, and on laying it open we ascertain what is the cause of this. It is a rigid material laid down here precisely like what we find in stricture of the urethra where we see the hard mass causing a constriction and narrowing the canal. This rigid plastic material is laid down in the sub-mucous tissue, and is altogether in length, from its commencement to its termination, about three inches. Turning to the pylorus, we find that the pyloric orifice is surrounded by the same kind of material, causing a certain constriction, so that although the orifice admits the five fingers, a hard and rigid material has taken the place of what is usually a flaccid and yielding structure. There is no deposit elsewhere in the body. There may be a few glands enlarged, but there is nothing abnormal to be found in any other part of the abdomen. What is the nature of this material which caused the obstruction of the intestine? We might say it is malignant. It hardly feels as hard as, and on a careful microscopic investigation it does not present any of the characters of, malignant disease. It presents all the characters of an ordinary inflammatory deposit, which brings this case closely in alliance with the stricture of the rectum, which was described by the late Mr. Colles under the name of organic stricture, in which lymph is deposited around the mucous membrane. No doubt that results generally from actual injury, such as a fish-bone getting into it and causing a low kind of inflammation. Nothing of the kind, however, is to be found here, and the origin and cause of it must, therefore, remain obscure. The case is interesting as an example, not only of this unusual form of obstruction, but also of its mode of causing death. Had I operated a week or so sooner, the success of the case, as regards treatment, might have been very satisfactory.—*January 23, 1875.*

Fatty Degeneration of the Heart.—DR. HENRY KENNEDY said: A great number of specimens have been exhibited at this Society of disease of the heart, but amongst them there have not been many where it was purely fatty degeneration; and it is an example of that description which I now exhibit. An old woman of eighty was admitted to the

Whitworth Hospital, Drumcondra, five months ago. She had some injury of the hip, but what attracted my notice to her was a modification of the breathing known by the name of the Cheyne-Stokes' respiration. I had very little trouble in arriving at the conclusion that the heart was fatty. The pulse was 66, exceedingly compressible, and large. It was "action without power," and so easily compressed that a slight touch of the finger was sufficient to obliterate the pulse, not merely at the point where the finger was placed, but to the extent of an inch from this. The respiration never ran into the exact form of the Cheyne-Stokes' respiration, and it never attained the exact rhythm that that breathing exhibits. It was high breathing, that which Dr. Graves has called cerebral respiration. The chest would take on itself a great and increased action, the nares dilate, but the breathing never was exactly the ascending and descending respiration.

I watched the case from day to day, and finally the patient died. On *post-mortem* examination we found considerable serous effusion into the right and left cavities of the chest. I found that the whole of the right side of the heart was converted in a great degree into fat, and on taking it out of the body there was not the slightest difficulty in making the fingers meet through the texture of the right ventricle. The left ventricle also could be broken up with great facility. From first to last there was no abnormal sound heard. I have tabulated a large number of cases to show that fatty heart and disease of the valves do not generally go together. In nearly three hundred cases there were some six or seven fatty hearts solely for one which had disease of the valves as well as fatty degeneration. In this case there was but the slightest trace of disease of the valves—so that, taking it as a case of fatty heart, it is a good example of the disease *per se*—it exhibits the fatty degeneration carried on to a great extent at the same time that the valves are nearly free of disease, and as such the specimen is worthy of being put on record. I am indebted to Mr. Elliot for making the *post-mortem* examination.—January 23, 1875.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*On the Morbid Changes occurring in the Blood-Vessels of the Brains of the Insane.** By RINGROSE ATKINS, M.A., M.D., &c.; Assistant Medical Officer, District Lunatic Asylum, Cork.

BEFORE the close of the present session I am desirous of presenting to the Association the result of a series of observations on the morbid histology of the brain amongst the insane, which has occupied me during a portion of the past winter.

From the examination of the cases on which these results are based, I have been able, as you will see by the specimens to be brought before you, to demonstrate the actual changes taking place, and to verify and confirm the observations of the various authors who have written upon this interesting question. It is a question, I need hardly say, fraught with difficulty, not only in the preparation of reliable specimens, but also in the inferences to be drawn from their examination, so many fallacies entering in that we must be guarded in coming to a conclusion as to what is pathological and what artificial. In dealing with the question I have confined myself entirely to the examination of the subject generally, avoiding, at present, any attempt to classify the morbid changes present, with the clinical symptoms existing during life, and, to a certain extent at least, with any of the special forms of psychical disorder. Before proceeding further I may here briefly describe the method of

* Read before the Cork Medico-Chirurgical Association, April 17th, 1875.

preparation of sections of the brain which I have adopted, and which is a combination of that proposed by Professor Betz, of Vienna, and that used by Dr. Lockhart Clarke in his researches on the minute anatomy of the brain and spinal cord, and since called after his name.

The brain having been removed as soon after death as possible, and the gross examination made, portions of the pia mater are carefully stripped both from the superior surface and also from the base of the organ, and placed in weak spirit and water, or some fluid which will not act on the tissues of the vessels contained in the membrane, and placed aside for subsequent examination. Portions of the brain are then cut from the frontal, parietal, and occipital lobes, from the pons, corpora striata, medulla, &c., and from any parts that may be visibly diseased; these are then immersed in "iodised spirit," made by adding tincture of iodine to rectified spirit, until the solution is of a dark sherry colour; the vessels containing the several parts, marked by bits of glass or wood of different colours, are then labelled, and allowed to stand covered in a cool place for from ten days to a fortnight, the iodine being gradually increased, for the first two or three days, by a drop or two each day. At the end of the above time the several pieces are then removed to a solution of bichromate of potash, or, still better, bichromate of ammonia, as recommended by Prof. Stricker, containing about three per cent. or thereabouts of the salt; in this they are allowed to further harden for about a week longer, and are then fit for taking sections; if, however, the observer is expert in cutting these, this time, as far as my experience goes, may be considerably shortened. For the purpose of cutting these sections, which may be taken from the various pieces in different directions, I use an ordinary razor, with the upper surface ground slightly convex, to allow the section when being cut to glide smoothly over the rounded surface, and thus render it less likely to crack and break off short; the razor when using should be well wet with spirit, and if very delicate sections are required the purest alcohol should be used. The sections thus made are next gently washed with water to remove any *débris*, and then placed in a *dilute* solution of carmine, and allowed to remain in it for 12 hours, or even longer. I lay stress on the word "*dilute*" advisedly, as by using the ordinary strength carmine solution the sections can be tinted in a few minutes, but I have found that far better and more satisfactory results can be obtained by using the diluted fluid, and allowing the

specimens to remain in it for some time, the various structures thus becoming slowly and more differentially tinted, and hence the cells, nuclei, &c., are more easily recognised. When the cuttings are thus sufficiently coloured they are washed in dilute acetic acid, or in many cases this is best dispensed with, and after rinsing in pure water they are transferred to spirit, and allowed to remain there some time, until the water has been displaced by the spirit, which will completely permeate the tissue; and, finally, they are rendered transparent by oil of cloves, which in turn takes the place of the spirit; it is advantageous before placing the sections in the oil of cloves to wash them with pure alcohol, so as to remove all traces of water, and allow the oil to act rapidly, often immediately, upon them. The sections are now ready for mounting, which must be done either in "Canada Balsam," or "dammar," which can displace the oil of cloves; the latter is the more convenient of the two, the aid of heat not being required in the process; and if that prepared by Mr. White, of Norwich, be used, the handy tube in which the medium is sent out greatly facilitates the worker, pressure only being needed to extrude the quantity requisite. When the preparations are thus mounted they can be at once examined with a low power, or—if neatly done—with a high one, to see that they are clear and free from air bubbles, &c., and then put by to "set," when the final examination can be made. This seemingly long and tedious process of preparation can be all accomplished in a few minutes, but it appears to me that better specimens can be obtained by pursuing the method by slow degrees, using a dilute staining fluid, and allowing each of the reagents to slowly and surely act; it is best, however, not to leave the sections too long in the oil of cloves, as this causes a shrinking of the tissues exposed to its influence.

I must here beg your indulgence for having detained you so long over what must have appeared dry detail, but the difficulties which I encountered myself when first commencing this study, and the absence of minute detail in the various works written has induced me to do so, and must be my apology.

The brain, the organ of the mind, as you are all aware, depends, more than any other organ of the body, on a proper supply of healthy blood for the due performance of its functions; any change in quantity, either diminution or excess, or any deterioration in quality, being followed by a corresponding error in function, and, as a consequence, in the great majority of cases, by mental

perturbation. This axiom, being distinctly kept in view, at once shows us the great importance of the examination of the minute cerebral vascular system in such cases, many of the other changes found being ulterior and secondary to a primary change in the cerebral arterioles. In many cases, of course, no change whatever can be detected, but in these it is fair to say that the blood itself—that subtle fluid which so persistently resists all attempts made to pry into its morbid conditions—may be at fault; in the great majority of cases of mental disease, however, be they acute or chronic, changes, and these of a very interesting and instructive character, are found in the vessels, and it is with these, and the direct effects they produce, I now intend to deal, deferring, until a future period, the secondary changes occurring in the other constituents of the organ—viz., the “cells,” “neuroglia,” &c.

I need not here delay to describe the normal anatomical arrangement of the vascular system of the cerebral convolutions, as it is rather with the structure than the arrangement we have now to do; for our present purpose suffice it to say that the cerebral arterioles are found to possess three coats proper:—1st. An inner fibrous; 2nd. A middle muscular; and 3rd. An outer fibrous coat. External to these, and surrounding them, is a fine hyalin sheath, formed by a prolongation of the pia mater inwards, and constituting a cylinder or canal, as it were, in which the vessels are contained. Between the outer coat and this sheath is supposed to exist a channel, the so-called “perivascular lymph space,” originally described by Robin, and supported by Obersteiner, Boll, and Roth, conveying the lymph and waste products to the great epicerebral lymph space, if such can be believed to exist. This space, surrounding the vessels, plays, as we shall afterwards see, an important part in subsequent pathological processes, and has given rise to a great deal of error in its true recognition. The diagram I now hold in my hand delineates this arrangement; the vessel is represented by this inner circle made up of three layers. The fine outer circle, separated from the inner one by a circular space, represents the hyalin sheath closely adherent to the brain substance beyond. I need hardly say that, in the actual tissue itself, such a differentiation of structure does not exist.

Being thus acquainted with the normal state of things, we shall be better able to appreciate the morbid changes occurring in the cerebral vessels, both as regards their structure and relation to their sheath.

Commencing now at the conditions found in the earliest stages, we come first to that of distension and dilatation of the arterioles, the result of congestion and stasis. This state of the vascular system is, in the great majority of cases, very difficult to account for; it cannot, for many reasons, be due to the increased mechanical pressure, pumping more blood than is normal into the cerebral circulation. Dr. Batty Tuke appears to think that it is rather due to some influence on the muscular coats of the vessels themselves, and advances three theories to account for this (*vide Edinburgh Medical Journal*, March, 1875, p. 803).

When the vessels are, from this cause, dilated and distended, we find the lumen increased in diameter, and often packed with dark-coloured and disintegrating blood corpuscles, the walls of the vessel being in close apposition to the sheath and brain tissue beyond, and their several coats appearing as if thinned and fused together. In many cases, however, the vessels are found quite empty, or, perhaps, with only a few blood globules still adhering to their walls. When this occurs we must not hastily come to the conclusion that congestion did not exist during life, but we must look further for the effects it leaves behind it, which may generally, by careful examination, be detected. Drawing No. I,* taken from a vessel of the pia mater, shows the lumen filled with dark-coloured corpuscles; while No. II., taken from a section through the corpus striatum, shows the dilated arteriole completely occupying its canal, the lumen empty, and the walls appearing as if thinned. Should the condition here represented be of short duration, and be rapidly removed, no organic changes will follow the vessels returning to their normal calibre in virtue of their elastic nature; but, on the opposite hand, should it persist for any length of time or increase, further morbid effects will ensue; and first amongst these is the occurrence of deposits external to the vessels, generally between the outer coat and the sheath. Of these there are three well-marked forms:—(1) Crystals of hæmatoidin; (2) fatty granular masses; (3) a finely molecular material, when fresh generally of a bright yellow colour, and highly refractive, appearing like an aggregation of fat globules, but which have not, as yet, reacted to the chemical tests for that substance. The individual particles are seen to be indistinctly corpusculated, and mixed with a finer *débris*. These particles have been likened, by

* It has not been considered necessary to reproduce the drawings mentioned in the text.

Dr. Batty Tuke, to the spores of the favus fungus, which they strongly resemble. In a case I recently had an opportunity of examining, where the symptoms were only of a week's duration, I found this material present, in large quantity, on the walls of the vessels, and of a bright yellow colour. In this case the congestion was excessive, but in such recent cases it must be borne in mind that this deposit has been found in the brains of those mentally healthy. A small quantity of this material is seen in this drawing, between the vessel and the brain substance external.

With regard to the fatty granules, their consideration must be deferred until I come to speak of fatty metamorphosis of the walls of the vessels.

Hæmatoidin crystals are, perhaps, the most common form of deposit. They generally occur at the angle of bifurcation of a vessel, and a few such are seen in drawing No. I., before referred to. Drawing No. I. A represents a collection of such crystals aggregated on the length of the wall of a vessel. These crystals are also found in the brains of those dying sane, and their presence appears to depend on the nature of the disease causing death. Accompanying, or following upon these deposits, changes in the walls of the vessels ensue, the continued and excessive distension brings about an inelastic condition of the coats, ampullations, fusiform dilations, and, finally, true aneurismal sacculations take place. Of the normal triplicate structure scarce a vestige remains, the walls appearing as if composed of flat nuclei, until, at length, stretched beyond measure, they give way, and here and there hæmorrhages occur. The existence of these minute aneurisms, their mode of formation, and their relation to cerebral hæmorrhage, is of extreme interest. MM. Charcot and Bouchard ("On the Study of some points in the Pathology of Cerebral Hæmorrhage") have recently devoted considerable attention to this condition of the small arteries. They believe their formation to be due to a "sclerous peri-arteritis," which the authors also call "arterial sclerosis," and under this term describe a wavy appearance of the hyalin sheath of the vessels, with a large excess of spherical, ovoid, or irregular nuclei, existing in it. Sometimes these nuclei are present in such large numbers that the proper coats of the vessel are almost entirely concealed. The outer fibrous coat of the affected arterioles may also be thickened and fibrous-looking, with fusiform cells lying in the direction of the long axis of the vessel, or this thickening may be absent; a large increase of the connective tissue nuclei

being present in this tonic. The muscular coat is also affected, the fibres being more or less separated and thinned; this is, however, secondary to the changes taking place in the adventitia and depending on them. Little or no alteration takes place in the inner fibrous coat, the large ovoid nuclei, however, being sometimes multiplied.

In this drawing (No. III. B), taken from a section through the optic thalamus, such an aneurismal sacculation is seen, a distinct bulging being present on one side of the vessel; the preparation shows the outer fibrous coat thickened and wavy, while the nuclei on the walls are greatly increased both in size and number. In this drawing (No. III. A), taken from a section through an ascending occipital convolution of a chronic dement, a fusiform dilatation of a vessel is observed, the walls are thinned, and contained within is the remains of an old blood clot; while in this drawing (No. III.), copied from a plate published by Dr. Howden in the January number of the *Mental Journal*, a distinctly aneurismal condition of the vessels has been attained. When this stage has been arrived at, rupture is very liable to take place, and hæmorrhage, either punctiform, or massive—as actually happened in the case from which the last mentioned drawing has been taken—follows, giving rise to symptoms according to its extent. Many observers, however, differ in their explanation of the formation of these minute aneurisms from that put forward by MM. Charcot and Bouchard, referring the sacculations rather to degenerative changes of the nature of atheroma, akin to that occurring in the larger vessels, and due, probably, to the mal-nutrition of their coats, the result of the long-continued tension. From the specimens I have examined, I would be inclined to think that they might be the result of both conditions, fusiform dilatations and ampullations following on an inelastic condition of the arterioles, while localised sacculations may be the consequence of an “arteritis,” with proliferation of the nuclei, a part and parcel of a similar condition taking place in the neuroglia. These minute aneurisms are found both in the pia mater and in the substance of the convolutions, or motor tracts; although Dr. Batty Tuke localises them altogether in the corpora striata. They are often found near apoplectic cysts, and are generally about the $\frac{1}{80}$ th to the $\frac{1}{40}$ th of an inch in length, and about $\frac{1}{4}$ th that size in breadth.

The rupture of these aneurisms is a fertile source of cerebral hæmorrhage. Charcot and Bouchard collected 100 cases, and in

all these minute aneurisms were found to be present, and they allege that this is the one organic condition, worthy alone to be regarded as the direct cause of sanguineous extravasation. Having arrived thus far at a frequent origin of punctiform hæmorrhage, a condition frequently found in connexion with vascular changes in the brains of the insane, let us diverge for a few moments, and follow the further changes taking place in the clot effused. Soon after the minute hæmorrhage has taken place, coagulation in the centre of the clot begins to occur, a fine network of fibrin is formed, in the meshes of which the blood corpuscles are entangled; by degrees a membranous investment is formed around the clot, constituting a complete capsule; this membrane is of variable thickness, and consists of a soft, originally homogeneous, translucent structure. This enveloping capsule is undoubtedly formed, as far as we can now see, by the precipitation of some albuminous material at the periphery of the extravasation. From the results arrived at by Schmidt, in reference to the coagulation of the blood, Rindfleisch alleges we can draw the explanation of this process, the "encapsulation being due to the precipitation of fibrin—the fibrinogen being supplied by the nutrient fluid which bathes the clot, while the fibrino-plastic matter is derived from the blood corpuscles within the clot." This fibrinous capsule is always present, and Rindfleisch insists upon this, its real nature. In this drawing (No. IV.), taken from a section through an occipital convolution, with the pia mater adherent, is seen a well-marked example of one of these encapsulated blood clots; it exists between the pia mater and brain substance, and immediately beneath it is another layer of effused blood, in which the changes are not so complete. Should the condition proceed to perfect organisation, further changes will take place both in the capsule and in the clot; in the former, interstices become apparent, which increasing gradually divide the capsule into different layers; connective tissue corpuscles appear in these interstices, and, finally, the organised membrane becomes incorporated with the connective tissue formed from the clot, the red corpuscles having been either directly converted into white ones, or the latter having immigrated from without, the mass of leucocytes thus formed becomes at once developed into fibrous connective tissue, and unites with that of the capsule, forming a small fibroid nodule. In this drawing (No. IV. A), taken from the remains of a minute extravasation in the corpus striatum, the almost organised capsule is seen split into two, and

contracting upon itself, as is evident from the rugose condition of its inner boundary, strongly resembling a section of a corpus luteum advancing in age; a few leucocytes still adhere to a portion of the membrane. As the age of these clots must be judged by the condition of the capsule, we must be careful in examining the latter, and ascertaining its reality. It often happens that the inner coat of the vessel may alone be ruptured; the blood then becomes effused between the other clots, forming a dissecting aneurism, which, on transverse section, presents all the appearance of a circular clot, with an enveloping membrane, the external coat of the vessel acting as such; the discovery of the central canal of the vessel, however, at once points out the difference and clears up the doubt, rendering evident the recent nature of the extravasation. These organised clots or cysts, as they very often become, are found in the various stages of their development, and of various sizes, in almost every part of the brain and its membranes, though in different degrees of frequency; their occurrence in the arachnoid has been described by Drs. Wilks and Sutherland (*vide Journal of Mental Science*, Oct., 1865, and *West Riding Asylum Medical Reports*, Vol. I.). The former observer mentions them as occurring only on one hemisphere in this situation, while the latter reports several cases where they were found on both hemispheres. These arachnoid cysts are generally found full of fluid, forming large pulpy swellings on the surface concealing the convolutions, the membrane surrounding them being tough and fibrous, and capable of sustaining considerable pressure. Such fluid cysts also occur in the choroid plexuses, and a specimen of such has been figured by Dr. Long Fox, in his work on the "Pathological Anatomy" of the Nervous Centres. The specimen I now hold in my hand, which I have just recently taken from the brain of a chronic dement of twenty-three years' standing, is a beautiful example of their occurrence in this situation; about the centre of the choroid plexus is seen a collection of clustered vesicles, each about as large as a small pea; when magnified, their walls are seen to be composed of a fine membrane, containing within it a clear colourless fluid. This specimen is put up in a solution of chloral. The corpus striatum is, perhaps, the most frequent seat of organised extravasations, but they are also found in the substance and on the surface of the convolutions, and often near the aneurisinal dilatations, of which I have already spoken.

Having thus considered the changes produced by congestion and stasis, let us next direct our attention to the conditions in which

the vessels are left after its subsidence. The elastic vessels, stretched beyond what they could normally bear, being suddenly released from the state of tension, recoil, as it were, on themselves, and, consequently, both their course and calibre become altered. They assume a tortuous and twisted direction, bending and coiling upon themselves, and even, in some instances, it is said, "knots" and "kinks" are found. This tortuous condition of the vessels is most commonly found in the pia mater, where the vessels, not running in unyielding channels, as they do in the brain substance, are free to become twisted and bent. This drawing (No. VI.), taken from a specimen under the microscope, well illustrates this state. The vessels are seen running in every direction, crossing and re-crossing each other, and forming regular coils. No drawing, however, could portray the beautiful appearance presented by these vessels. In the vascular channels in the brain substance, the calibre of the vessels becomes contracted, the arterioles shrinking within their sheaths, and forming angles by the uneven contraction of their walls. This drawing (No. V.) shows a vessel cut transversely, and shrunk in this manner within its sheath, leaving a clear ring between it and the brain substance beyond. This drawing forms a strong contrast to that of the dilated arteriole, before referred to, where the vessel is in close apposition to the tissue outside, and its walls wasted and thinned. On the nature of this clear space surrounding the vessel, much confusion has taken place and error crept in, some authors considering it to be the normal perivascular lymph space exaggerated; others looking upon it as a dilatation of the cerebral tissue, which, from its nature, being unable to return to its normal state, on the shrinking of the vessel, leaves the clear space seen; while others, again, believe that these spaces are merely the result of contraction, consequent on the use of the hardening agents necessary in the preparation of the specimens. In all those I have myself prepared I have never been able to observe any membrane lining this space, as is the case in the normal condition; and in many of the preparations the cerebral structure around has appeared as if condensed and granular. I look upon these appearances as pointing to a shrinking of the brain tissue, from some cause, as the origin of these spaces; and, in addition, I may mention that I have often observed fine processes proceeding from the vessel across the space, as are well seen in the specimen from which the drawing last referred to (No. V.) is taken, described by Boll as existing on the *outer* surface of

the sheath, and penetrating the cerebral substance, as if for the support of the sheath. It would, hence, appear that the sheath itself becomes closely adherent to the outer coat of the vessel, and as the latter shrinks it goes with it, and at the same time withdrawing from the cerebral substance these supporting processes, gives the vessel a thorny appearance as it here presents. Obersteiner looks upon these processes, or "Deiters' cells," as they are called from their first describer, as direct communications between a lymphatic space surrounding each nerve-cell and the perivascular lymph space surrounding the vessels. This theory, however, requires confirmation. From these considerations we must look upon these spaces as abnormal formations, produced by the morbid processes going on, assisted, probably, by the hardening agents to which the tissues are exposed in their preparation. We now come to the structural changes taking place in the several coats of the vessels themselves—a very important class, as on them many of the conditions of mal-nutrition of the nervous tissue—followed by such baneful influences on the mental apparatus—depend. We may have the three coats thickened, as in this drawing (No. VII.), where each of the tunics is quite distinct and separately affected; or, again, we may have the inner coat alone thickened, while, in many cases, the muscular layer is singly hypertrophied. It is in recognising these pathological conditions that we must exercise caution in drawing hasty inferences, as almost identical changes, especially as regard the fibrous coats, can, and often are, produced by reagents, such as glycerine, camphor water, acetic acid, &c., used in mounting the specimens. That morbid thickenings, however, do occur, cannot be doubted, and their presence may be truly recognised by avoiding the use of fluids which have been found to produce similar artificial changes. The hypertrophy of the muscular coat is most probably due to the overwork consequent on the endeavours of the vessels to propel the blood through the tortuous and contracted vessels—such a condition being rarely present, save in long-standing cases, where obstructions of this nature are always found. In this drawing (No. VIII.), taken from a section through an ascending frontal convolution, from a case of organic dementia, I have figured a very different kind of thickening. Comparing the two last drawings (Nos. VII. and VIII.) together, in the former the three coats are quite distinct and separate, the lumen unaltered in character, and filled with disintegrating blood clot, while in the latter the lumen is reduced

to a mere furrow, so encroached upon is it by the thickened walls, the coats of which are completely fused, all trace of a division of the layers, or the presence of muscular nuclei being obliterated, and fibroid-looking material substituted. This condition I believe to be produced by the infiltration of an albuminous plasm into the walls of the vessel, which glues the coats, as it were, together, and finally obscures and destroys their structure—encroaching, at the same time by its distension, on the canal of the arteriole, and, in time, becoming converted into a fibroid connective tissue, which appearance it here presents. This specimen resembles, to a certain extent, that condition figured by Dr. L. Fox as occurring in “glioma” of the brain, and also that described and figured by Dr. Tuke as occurring in syphilitic disease of the organ, differing, however, from the latter in the absence of all trace of the muscular coat, and wanting the accompaniments of the former; and as no peculiar morbid appearances, save atrophy of the cells, were here present, in addition to this condition, and as no history or trace of syphilis could be discovered, it appears that obliterative thickening can take place independent of these conditions. As to the hyalin sheath, of which I have so often spoken, this also becomes thickened by disease; but, from being so frequently incorporated with the outer fibrous coat, its alterations cannot be so easily detected.

I have, however, here a specimen, where by chance the vessel itself has fallen out of its containing canal, leaving the sheath, slightly thickened, still adherent to the sides of the space. This condition of the sheath has been used as part proof of its normal existence, and the preparation now before you illustrates it in a very perfect manner. Another condition of the minute arterioles still remains—namely, “fatty metamorphosis” of the muscular nuclei, with granular masses of a similar nature (before mentioned) deposited on the walls. In this drawing (No. IX.) the appearance presented by a vessel commencing to undergo this change is fairly seen; the specimen is taken from the pia mater, and minute oil globules are seen dotted over its surface and around it. This condition is very important in its relation to cerebral hæmorrhage, as was first pointed out by Paget, and afterwards described by Kölliker and Wedl. Dr. Bouchard, on the other hand, thinks that the fatty granules seen are secondary to other changes, and do not give rise to a condition of the vessels favourable to hæmorrhage, averring that the granules are seen occupying the lymphatic space, and not taking the place of the

muscular tunic, as supposed by Paget. Dr. Bouchard, however, acknowledges that primary fatty changes do take place in the capillaries of the brain, but says that they have been confounded with the above-mentioned secondary metamorphoses. I have examined many vessels, chiefly those in the pia mater, where the muscular nuclei were occupied by fatty granules, and no other appreciable change could be observed in their coats, and how such a condition could be secondary is difficult to understand. As regards the larger vessels, especially those at the base of the brain, atheromatous or calcareous changes are often found in those dying insane, leading to local softenings, as occurred in the case from which this preparation of the circle of Willis was taken; the left middle cerebral artery is seen to be almost occluded by calcareous degeneration of its walls, and the portions of the organ which it supplied were thoroughly softened, and in parts almost diffuent.

Having thus reviewed, *seriatim*, as far as we are now acquainted, the morbid changes found in the blood-vessels, and the direct result they give rise to, let me briefly picture to you, in a general way, the clinical effects which may follow, deferring until a further period any account of the modifications occurring in the "cells neuroglia," &c., as a secondary consequence of primary vascular disease. Starting with the condition of dilatation, we can at once, on physiological grounds, portray the symptoms which will, and are found to, accompany it. Should active arterial hyperæmia be the initial cause, over-nutrition of the brain-cells will take place, exaltation of function will follow, the ideas will flow free and fast, fancy will be excited, imagination roused, motor impulses become uncontrolled, and acute mania will be the result. Should this active hyperæmia change to passive congestion, and stasis occur, a lowering of nutrition takes place, depression follows exaltation, the ideas come slow and shallow, indifference succeeds excitement, motion becomes impeded, and sluggish and secondary dementia gradually supervenes. Should stasis persist, organic changes in the cell elements ensue, blocking up of the outlets for waste products follows, resulting in the infiltration of these products into the tissues, apathy succeeds indifference, consciousness and volition are gradually abolished, the calls of nature neglected, and the unfortunate sufferer sinks into a state of hopeless fatuity, life being often prolonged until the completely-disorganised nervous system can no longer sustain the weight it has to bear. I would wish you, however, to recollect, that although I have described these

changes so rapidly, yet years—aye, many years, may pass before the picture is complete; remission may follow remission, the intellect may brighten as the dilated vessels contract, opening up the blocked outlets, and allowing the waste materials to be carried off, and the deteriorated but not shattered mind may be restored to reason, until a fresh attack brings the sufferer into a worse condition than before, perhaps again to remit, leaving him a step lower in the scale of mental power than he was previous to the last attack; until finally, as aggression succeeds aggression, the structures become incapable any longer of returning to the due performance of their functions, and then the mental, if not the bodily, end comes. But this dark picture has a brighter side; instead of congestion and stasis following arterial hyperæmia, the latter may rapidly disappear, and mental health be restored—never again, perhaps, to be interfered with; or, should stasis follow, it may, perchance, after hope has almost well nigh gone, suddenly cease, and a similar result ensue.

And now that I have reached the limit I have assigned myself, I fear I have far exceeded the allotted time. The interest its study afforded me, and its great importance to a correct knowledge of mental disease, must be my apology; and here I leave the subject for the present, hoping that, should we be spared to meet next session, further opportunities and increasing knowledge may enable me to continue what I have now commenced.

ART. XXII.—*Three Cases of Acute Articular Rheumatism presenting Anomalous Symptoms, and requiring an unusual course of Treatment.** By JAMES F. DUNCAN, M.D., President of the King and Queen's College of Physicians in Ireland; Senior Physician to Simpson's Hospital, and to the Maison de Santé, &c.

THE following cases appear to me to present features of sufficient interest to be placed on record from the unusual character of their attending symptoms, and from the plan of treatment that proved effectual for their restoration to health. They were all young men from about twenty to twenty-five years of age; unconnected with each other as to residence, occupation, or intimacy. They occurred nearly simultaneously; in one instance the attack was attributed to the patient having got wet when going to an evening meeting, and sitting for some time in his damp clothes; the other two

* Read before the Medical Society of the College of Physicians, Wednesday, May 12, 1875. [For the discussion on this paper, see p. 547].

blamed exposure to cold in the ordinary way for bringing on their illness. In all, their symptoms were as closely similar as could well be imagined. While each case presented the ordinary features of acute rheumatism—high fever, swelled joints, sour acid perspirations, intense local pain, inability to move, tenderness to touch, and tendency to metastasis from one joint to another—none of them exhibited the blush of redness that usually accompanies the swelling in this disease, but the parts retained, almost perfectly, the natural pale colour of the skin. But the features which principally appeared to me to distinguish them from the ordinary form of this affection were marked pain and tenderness affecting some part of the spinal column, which I do not remember to have noticed before, and, further, all absence of acid reaction in the urine. This latter formed the indication of treatment, and with its disappearance convalescence, in each instance, was established. They were all young men of a respectable position in society; their appearance was that of fair ordinary health, though their complexion was pale, probably from confinement to office work, and their constitution did not seem to be impaired by excesses of any kind; their habits were temperate, and they did not smoke. I give the history of each case very briefly from the notes I made at the time, which were only taken down for my personal use, without any idea that they should be required for any other purpose. When I met with the first case my attention was specially called to the condition of the urine from the fact that he had been a patient of mine about a year before, when, after a fair trial of alkalies with little benefit, I was induced to try the acid treatment, which had the effect of producing an immediate and decided amelioration of all his symptoms. My notes of that date do not contain any mention of the urine, but I have a distinct remembrance that it was then loaded with what appeared to me to be a sediment of a phosphatic character. But I looked upon the case as an instance of individual idiosyncrasy, and did not at all expect to meet with other examples of the same kind again, and certainly not so soon as they presented themselves. It was only when I perceived the general resemblance between the features of the other cases that I was led to examine the urine of each, and to fancy that the line of treatment which had been effectual in one might be useful in the others.

CASE I.—Mr. L., a young man labouring under an attack of acute rheumatism, was admitted into the *Maison de Santé*, Char-

lemont-street, on the 8th of February, 1875. He attributed his illness to exposure to cold two days previously. He had been twice ill in the same way before, once in 1872, and again in the spring of 1874, when, for the first time, he came under my care. This latter attack was supposed to be caused by his taking a Turkish bath a few days previously; but it is right to add that he stated he had often taken them without any ill effects following. His condition at the time of his admission in February, 1875, was extremely deplorable. He was perfectly helpless, requiring the constant services of an attendant day and night. His suffering was most acute; almost all the large joints were swelled and tender, and he complained of pain with a sense of constriction round the lower part of the chest in front. There was high fever, increased heat of skin, great thirst, and a perfect loathing of food of every kind. There was no evidence of any cardiac affection on the most careful examination of the heart; the joints, though swelled, retained their natural pale colour; the sour smell of acute rheumatism was perceptible, but was not so strongly marked as it often is; there was also the tendency to perspiration so characteristic of the disease. At first I fancied that the pain across the lower part of the chest might be indicative of impending inflammation about the heart, but having satisfied myself that there were no grounds for such an inference, I had him carefully raised in the bed, and then I discovered marked tenderness over the dorsal vertebræ; indeed, so great was the sensibility to touch, that he cried out sharply from pain when I pressed over the parts.

Looking to the history of the case, and taking the immediate cause of the attack as an indication of treatment, I thought it best, at first, to try the effects of diaphoretic medicines simply, combined with swathing the joints in wadding which had been steeped in an anodyne and alkaline lotion, and covered with oil-silk.

The next day, February 9th, his pains continued unabated, and he complained of complete insomnia during the night; he was then ordered pills consisting of one grain of opium, half a grain extract of belladonna, and one grain of ext. colchicum every second hour; a mixture of equal parts of tinct. arnic. and collodion to be painted over the painful parts; lemonade for drink, and the swathing in wadding over the whole affected limbs to be continued.

February 10th.—There was considerable improvement; the pains had been greatly relieved by the arnica, but he had scarcely any sleep; the bowels had not been opened since his admission; his

pulse was 120 and weak, but regular. He had some cough; and on examining the urine, the first time it was possible to do so, I found it was dark-coloured, neutral in reaction, with a considerable deposit of a white appearance, which I considered to be phosphatic in character; owing to the amount of suffering he endured when he made the least attempt at motion, I thought it inadvisable to order him any aperient medicine, but substituted for the pills he had been taking others containing half a grain of blue pill and of extract of belladonna, and one grain each of ipecacuanha and opium, one to be taken every two hours, with a demulcent cough mixture, and a continuation of the local remedies.

February 11th.—His condition was unchanged, save that his cough had ceased to be troublesome. The mercury and ipecacuanha were accordingly omitted from his pills, and one grain sulphate of quinine in each substituted in stead. He was also ordered dilute muriatic acid, two drachms in an eight-ounce mixture, an eighth part to be taken every third hour. This change in the treatment was made in conformity with the previous experience I had of its benefit with him in the preceding attack.

February 12th.—Through a mistake of his own he had refused to take the acid mixture, believing it to be a repetition of what I had desired him to omit. The pulse, however, had come down to 108, but the urine continued neutral, and the phosphatic deposit persisted.

February 13th.—There was this day considerable improvement in his condition; he was able to move himself slightly in bed; the pulse was 84; the neutral reaction continued.

February 14th.—The muriated tincture of iron was substituted in his mixture for the dilute muriatic acid. From this date there was a steady and marked improvement; he was nearly entirely free from pain and swelling of the joints on the 18th, but the urine continued to exhibit a neutral reaction until the 20th, when it resumed its normal acid character, which it retained afterwards as long as he was under treatment.

February 23rd.—There was some return of pain in the left elbow, but there was no swelling or redness of the joints. He was taking his iron mixture, but not regularly, and his pills of quinine and opium had been left off for some days; both remedies to be resumed.

February 25th.—The pain had moved to his left shoulder; he had been guilty of indiscretion in his diet, which probably was the cause of the return.

The same treatment was continued; the pains were afterwards trifling in amount, his appetite increased, his general health improved, and he left the institution convalescent on the 12th March, 1875.

CASE II.—Mr. H. G., a clerk in the Bank of Ireland, was admitted to the *Maison de Santé* on the 19th February, 1875, labouring under acute rheumatism from the 13th of that month. He attributed his illness to having got his clothes wet when going to one of Moody and Sankey's meetings, and sitting in them for a couple of hours before his return home. He had been under treatment in his lodgings, under the care of a very respectable medical man, previous to his admission; he stated that the treatment employed for his relief was the exhibition of alkalies. His suffering was extreme, and it was with great difficulty he was carried up stairs to his room from the cab which conveyed him to the door. On testing his urine it was found neutral in its reaction; there was not much swelling of the affected joints, but there was acute pain, and there was considerable tenderness of the lower portion of the dorsal spine when the part was examined. Owing to the similarity of his condition and symptoms to that of Mr. L., the treatment which had been found beneficial in his case was immediately directed for Mr. G.—namely, pills of quinine with opium and belladonna, one every third hour; dilute muriatic acid in a mixture, one drachm to eight ounces, an ounce every third hour; arnica paint to the painful parts, and the affected limbs to be swathed in French wadding, covered with oiled silk.

The next day, February 20th, there was considerable improvement; the pulse had fallen to 84; the tenderness along the spinal column was diminished, pain was confined to the left knee, and the appetite was improved; only the urine remained neutral.

February 21st.—The pain had left the left knee, but it had seized the right wrist. The urine was neutral, with a considerable brownish deposit through it; he had slept badly, but his appetite was good; the pupils were natural in appearance.

February 22nd.—Very much better in every way; had his medicines every second hour; urine still neutral.

February 23rd.—Complained only of a slight pain in left elbow; pulse 72; urine neutral.

February 25th.—Urine for the first time exhibited an acid reaction; he complained only of a little pain in the right groin.

March 1st.—Convalescent.

March 6th.—He had a return of his pains in right instep and knee, and behind his thigh. He had been allowed a little indulgence as to the use of grapes, oranges, and other articles of diet, which some friends supplied him with, and had exceeded the quantity permitted; this was probably the exciting cause. I ordered him a mixture containing calcined magnesia and colchicum, but the next day his pains returned with great severity; his appetite was defective, and his urine again exhibited a neutral reaction. He was then put upon the tincture of iron, with quinine in mixture, and his former pills were resumed.

March 8th.—The urine was this day acid; there was still some pain and tenderness over the lumbar vertebræ, but nothing to signify, and his general condition was much improved. As he was anxious to take advantage of a short leave of absence, which had been granted to him for the purpose of going to a friend's house in the country, he left the institution the next day. I have since seen him at his office perfectly free from all his ailments.

CASE III.—Mr. M., aged twenty-three, admitted to Charlemont-street on the 8th of March, 1875, labouring under acute rheumatism. He stated that he took cold about three weeks previously, and that for the last week of the time he had been afflicted with pains in one or more joints of his body. I saw him on the 9th; at that time his right shoulder was principally affected; his pulse was 100 and feeble; a sour smell exhaled from his person; his urine was of a reddish colour, as if it contained blood, and the reaction was very faintly acid. He was ordered a diaphoretic mixture, with pills containing one grain of blue pill and half a grain each of opium and colchicum; one to be taken every third hour.

March 10th.—He was more feverish, eyes heavy; his pains had attacked the left side of his body; his tongue was moist and clean at the edges, but furred in the centre; his pulse was 108; the urine not so deep in colour, with the same faint acid reaction. He was ordered to stop the mercurial and opium pills, and to take others instead, containing one grain each of sulphate of quinine and opium, and one quarter grain extract belladonna every third hour, with lemonade for drink, continuing the wadding swathe.

March 13th.—He was rather better, tongue was cleaning at edges; pulse 100. He was still perspiring, but the urine, which was scanty, had now a neutral reaction. He was ordered to continue his pills,

and to take the muriatic acid mixture, one drachm and a half in eight ounces; one tablespoonful every third hour.

March 14th.—He had taken only two ounces in all of his mixture, but he felt himself better. Slept well the previous night. His pulse was 96, but the urine was still neutral. He was directed to take a wineglassful of his medicine for a dose.

March 15th.—His pulse was 88; his tongue cleaner; the temperature of his body had fallen considerably; his perspiration was nearly gone; his pains were much easier, and he was able, for the first time, to sit up in bed with a bed-chair supporting him. His urine came more freely, and without inconvenience, but it was perfectly neutral.

March 16th.—His pulse was 80; tongue cleaner; urine still neutral. Pain relieved, confined to his left wrist, but it was more a stiffness than a pain. His bowels were opened yesterday by an aperient draught.

March 17th.—Pulse 80. Pains diminished; could move his arms with freedom; urine still distinctly neutral.

March 18th.—Urine acid for the first time. Pains have left his left shoulder, and have attacked slightly his right one; attributes the change to cold from exposure in the night. The dose of his mixture was reduced one half owing to the change in the condition of the urine.

March 19th.—Urine again exhibited a neutral reaction. There was perceptible some remains of the sour smell from his perspiration. His pains were considerably relieved, but traces of them were complained of in his left shoulder and right wrist. He was up yesterday. To resume his former dose of the acid, but not to do so until his bowels were moved by aperient pills, containing blue pill and comp. rhubarb pill.

March 20th.—Bowels were not moved; has had none of his mixture in consequence. Pains are much worse; right wrist swelled. To have an aperient draught and his mixture again, whether any action of the bowels followed or not.

March 22nd.—Bowels were moved after a second dose of the medicine. The urine is again acid in its reaction; marked improvement in his condition; able to move his fingers and hands freely.

March 23rd.—His pills were omitted yesterday. Had not so good a night. Complained of great pain over the sacrum; also of a slighter pain in right hip and left elbow; his arms and fingers were quite free. Medicine continued.

From this out his progress towards recovery was steady and satisfactory; the pain and tenderness over the sacrum disappeared on the 25th, and on the 29th he was discharged well.

At the time I resorted to the foregoing treatment I was not aware that any other practitioner had been led to adopt a similar course, and it was only after the present paper was drawn up that I found, on consulting some books of reference, that Dr. J. Russell Reynolds, in 1869, had published some cases in the *British Medical Journal*, in which he had used the muriated tincture of iron in large doses, with very decided benefit. In two of these the condition of the urine is stated to have been alkaline, but no information upon this point is given as to the state of that fluid in the remaining six. In fact he was induced to resort to this remedy, not from any theory as to its effect upon the renal secretion, but simply from analogy, because of the marked benefit derived from its use in erythema and erysipelas. It is quite possible that this medicine may have a wider range in its application in this disease than I am at present disposed to allow; but I think the fact that we may have acute rheumatism in patients in whom the urine is not acid in its reaction is a point worthy of serious attention, and one which should lead medical practitioners carefully to examine its condition in all cases, and to shape their treatment accordingly. There can be no question that whatever part the administration of the hydrochloric acid played in the instances under review—for it is freely admitted that the adjuncts of the treatment may have had a good deal to do with the quickness of the termination—it certainly was productive of no injury; on the contrary, everything led me to believe that it really had a good deal to say to the relief of the patient, and that the larger the dose, and the shorter the interval in the administration, the more striking was the benefit. The dose Dr. Reynolds gave was 30 minims of the perchloride in the two first cases every sixth hour, and 40 minims in the remainder, and he states that the relief was most marked in its character, that the pain was lessened in one day in four cases, in two days in three, and in three days in one; the temperature was reduced with similar rapidity; and he sums up by saying that there was an entire absence of discomfort from taking the medicine; there was no head-ache; the tongue cleaned; the feelings improved, and that the cases terminated favourably in all within the short period of fifteen days. I omit from this enumeration one of his cases which was complicated with cerebral symptoms, and in which the patient died comatose.

The progress of animal chemistry in modern times has so deeply ingrained into our minds that the cause of acute rheumatism is the preternatural presence of lactic acid in the system, and that the proper antidote for this is the administration of some suitable alkali, that it requires, I am afraid, some effort on the part of my hearers to be convinced that there has not been some mistake committed here either in determining the nature of these cases, or observing the effects of the treatment; and I confess that, judging from my own feelings in the matter, incredulity under the circumstances appears not only pardonable but justifiable. If, however, the statement of facts as they have occurred shall have the effect of stimulating my brethren to a closer observation of facts, and to a more searching inquiry into the effects of remedies, good will be accomplished, whether the view here put forward be established or overthrown.

ART. XXIII.—*A Case illustrating the Benefits of Thoracentesis.**

By J. MAGEE FINNY, M.D., Dubl.; Fellow of the King and Queen's College of Physicians; Physician to the City of Dublin Hospital, &c.

THE case I venture to bring under notice presents, I consider, points of no little interest and practical importance—in the nature and course of the disease, the complications attending it, the unusual symptoms presented in their development on the one hand, and, on the other, in the benefits attending the use of thoracentesis, and in the successful issue of the case.

(Reported by Mr. Frederick Page, Practising Pupil.)

John M., aged twenty-six, coachman, was seized on Tuesday, 5th January, 1875, with shivering, vomiting, pain in the left side of the abdomen, and cough. He was admitted into the City of Dublin Hospital on January 10th, and, on examination, was found to be suffering from acute pneumonia of the lower lobe of the left lung. His temperature was $104^{\circ}\cdot4$ in the axilla; pulse 108, weak and compressible; respirations 44 per minute; his cheeks were flushed, and of a dusky hue; expression anxious; herpes on the upper lip, and his tongue was dry and furred. He was very weak, and unable to walk into the ward unassisted. This weakness was

* Read before the Medical Society of the College of Physicians, Wednesday, May 12, 1875. [For the discussion on this paper see p. 550.]

due to the severity of the febrile disturbance, and, in part, to the lowering treatment experienced before admission, as, for five days, his only allowance was whey—"being too weak," the doctor told him, "for beef-tea."

Previous history.—Patient has always been a very healthy man, never subject to cold, always temperate; but, owing to his occupation as a job carriage driver, he was exposed to much wet and cold.

The treatment adopted consisted of hot poultices applied to his side, beef-tea and wine, and a mixture of chlorate of potash, spir. æth. nit., in decoction of cinchona, administered every third hour.

Next day the fever was less, temperature being 103° , and, on the 12th January, it sank in the morning to $101^{\circ}2$, pulse to 112, and respirations 30 in the minute. During the day, however, there arose a complication—viz., pericarditis. This was revealed by a short, hard, and frequent cough, very anxious look, and, though no pain was specially referred to the heart, by a well-marked to-and-fro friction sound which was heard over the heart, both at apex and base. The urine was scanty, but non-albuminous, and it contained chlorides. The absence of morbus Brightii and rheumatism made me fear that we might have a case of tuberculosis to deal with; but the correctness of this assumption the subsequent course of the disease disproved, and it became evident that the pericarditis was caused by extension of inflammation from the left pleura, which probably, coincidently with the pneumonia, had been attacked by inflammation. The temperature rose $2\frac{1}{2}$ degrees in the evening, and the pulse was 126. Ten grains of pulv. ipecac. co. were ordered for the night, and poultices to the præcordium.

The patient spent a restless night, and the cough was very troublesome, and accompanied with thick, viscid expectoration. Physical examination by palpation and auscultation showed an increase of pericarditis the next day, while over the left lung, from the clavicle to about an inch below the nipple, a tracheal note was elicited by percussion. No abnormal sounds were heard here, yet vocal fremitus was not so marked as it should be, though over the lower part of the lung it was distinct.

The next day the tracheal note had disappeared, and dulness, taking its place, existed all over the left lung from the clavicle down, with cessation of vocal fremitus. No breath sounds were audible in the lung, but, on the right side, respiratory sounds were puerile in character. The area of pericardial friction sound was

less wide, and the impulse, which could not be accurately defined, seemed under the sternum. The patient, who had lain on his right side two days ago, now lay, by preference, on his left side. During the night he had been delirious and very restless, with a good deal of jactitation. These signs and symptoms were, doubtless, due to rapid serous effusion into the left pleura and pericardium. A pustular eruption was to-day noticed on his forehead, pointing, probably, to the nature of the effusion into the pleura being purulent.

Jan. 15th.—The measurement of the chest to-day showed the left side larger than the right, below the nipple, by $\frac{3}{4}$ ths of an inch. The pericardial friction has disappeared, except at base. The treatment, which, since the pericarditis set in, consisted of sulph. quinae in 5-grain doses, was changed now to blistering the chest, and iodide of potassium and bark, while the dietary was generous—2 pints beef-tea, 3 pints milk, an egg, and 8 ozs. whiskey being given each day.

17th.—Pericardial effusion retiring; friction under the sternum, not heard at apex; pulsation of the heart seen in epigastrium, and also communicated through the pleuritic effusion to the chest wall at upper left part; impulse well seen by placing two stethoscopes, one on the epigastrium, and the other on the second intercostal space, the pulsation in the epigastrium preceding that of the infra-clavicular region by a well-marked interval; on applying the ear to the latter place the impulse was sharply felt, and the heart-sounds most distinctly heard; the left side was smooth to palpation, the hollows between the ribs being filled out to the level of the ribs, and, by measurement, it was found to be an inch larger than the right, both above and below the nipple; dulness was absolute over the whole side. Marked throbbing of the vessels in the neck was noticed to-day. The other symptoms were much the same as before. Temperature about 101° to 102° ; pulse 100 to 108; respiration 24 to 30. The urine was still small in quantity, and for this a diuretic, containing iod. potass., spir. æth. nit., spir. juniperi and infus. digitalis, was administered. The cough has not been so frequent the last couple of days, but comes on in paroxysms, and is accompanied by a thin, watery expectoration.

20th.—The pulse has risen to 120 in the evening, and is small and weak. The chest to be blistered by a larger blister (6×5).

23rd.—The pericardial friction sounds have quite disappeared. The heart, the last three days, was much excited, probably due

in part to some adhesions forming, slight exertion bringing on rapidity and irregularity of the pulse. The heart is beating in the epigastrium and to the right side of the ensiform cartilage, due to eccentric pressure of left pleural effusion; and hepatic dulness extends to four inches below the ensiform cartilage. The fits of dyspnoea are more frequent, the face becoming livid during them, and the patient gasping for breath. Œdema of the skin of the thorax exists to some extent, the left side measuring, above the nipple, $1\frac{1}{4}$ inches more than the right, and at the ensiform cartilage $1\frac{3}{4}$ inches more.

As the respiration, though not quicker than 34 in the minute, was shallow, and the pulse ran up to 132, I felt no time was to be lost; and, as the ordinary treatment, which had been tried during the ten days the effusion had existed, had failed to show any effect on its progress, I tapped the chest by means of the aspirator about 11 o'clock this evening, and drew off 29 ozs. of healthy, sweet pus. The patient expressed much relief by the operation, and the breathing became deeper and fuller, sinking to 24 in the minute, and air entered the upper part of the lung freely and fully, and the chest here became clear on percussion, and gave vocal fremitus.

The place of tapping was not that advised by most writers on the subject, but was at the sixth intercostal space, an inch to the axillary side of the nipple. The reasons I selected it were two-fold—first, from the facility of tapping without causing the patient to make any exertion, which was usually attended by paroxysms of dyspnoea and cough; and, secondly, that I feared I might pierce a hepatised unresolved lung had I inserted the trocar below the eighth rib, as recommended by Bowditch and other authorities. It was, however, in the site where pleural abscesses usually point, and is the place, I afterwards found, which Laennec recommends.

24th.—The next day the physical signs over the left side remained the same, the air entering the upper part of the lung freely. I hoped that the moderate tapping would have sufficed, and absorption of the remainder taken place. Whether this happy result was more than might fairly be expected in my case, I cannot say (although such has been the experience of most of those who have employed thoracentesis). Anyway a fresh complication, which was enough to prevent such a favourable issue, appeared to-day, and pain was complained of, of a stitching, shooting character, in the right side outside the nipple. On auscultation this was found to be produced by pleurisy of the right side—the friction

being best heard in the axilla on a line with the nipple. The temperature, nevertheless, fell to 101° in the evening, and the respiration to 26; but, no doubt due to weakness, the pulse rose to 132.

The treatment now consisted of beef-tea, port wine, whiskey, eggs, and milk, and the following medicine:—

R.—Pot. chlor. ʒij.

Liq. ferri perchlor. ʒiij.

Quinæ muriat gr. xvi.

Infusi calumbæ ad ʒviiij. M.

An eighth part three times a day.

25th.—The left pleural cavity is again filling, as dulness extends quite up to the clavicle; œdema of the chest wall exists, with some erythema over the left side. There is also œdema of the feet and ankles. The pulse was very feeble, and as the fluid was now known to be purulent, my colleague, Dr. Benson, agreed with me as to the advisability of removing as much of it as practicable. Accordingly I drew off, through the seventh intercostal space, 75 fluid ounces of pus, which was free from any bad odour, and of healthy colour and consistence; except at the end it was thicker than usual. As the fluid diminished, the patient was made lie towards the canula, and thus nearly all the contents of the pleural cavity were evacuated. I did not draw off *all* the fluid, for towards the close of the operation a couple of severe coughing fits (induced, doubtless, by the stretching of the pulmonary tissue and pleura) warned me to desist; during these the face became very red and congested, and the patient gasped for breath. He also complained of pain, weight, and uneasiness in the side. To the last violent fit of coughing was due the expansion of the lung, as before it little breath-sounds were audible in the upper part, while after the paroxysm the air entered with a crackling sound, and breath-sounds were heard freely over the anterior part of the lung as low as the seventh rib. Posteriorly, however, there did not seem to be such a good result, and this I attribute to the condition of the lower back part of the lung produced by the pneumonic process, which, as far as I could discover, had never undergone resolution.

In the evening of the operation, which was well borne, the pulse fell from 132 to 116, and the temperature to 99°·8. A grain of watery extr. opium was given at night. The measurement, made

the next day, showed a reduction of nearly 2 inches on the left side since 23rd, and $\frac{1}{2}$ inch less than the right side. The respiration was much easier now, the patient's aspect being that of relief and ease in comparison with before the tapping. The heart returned somewhat towards the left, but not as much as I expected, probably from having formed adhesions with the right pleura costalis; but the stomach was drawn well up under the ribs, showing that the vacuum, which would otherwise exist between the ribs and the unexpanded lower lobe, was filled by the diaphragm and stomach. Over this region was well-marked tympany. This improved condition continued daily, the temperature, in the morning, varying from 98° – $99^{\circ}.5$, and in the evening, 100° – 102° ; and on the 29th he was able to lie on his left side without coughing, which he had not been able to do for some weeks.

But, unfortunately, it was not to last long, for on the 1st Feb. the left side was again filling and enlarged, and in direct proportion therewith the temperature and pulse rose. The respiration did not equally become more frequent, doubtless from the right lung being habituated to the extra work thrown on it. The dulness was preceded by a most marked tracheal percussion note, or tympanic dulness of Skoda under the clavicle, exactly as occurred on the former occasion of effusion; so that on its appearance effusion was at once prognosticated, and generally showed itself in twenty-four to thirty-six hours after. Further, when the side became very full of fluid, and pressed upon the heart, already previously displaced under the right of the sternum, the sign of conveyed impulse and cardiac sounds was evidenced both in the infra-clavicular and axillary regions. Hectic fever had set in on Feb. 1st, and continued unmitigated until the pleural contents were a *third* time evacuated by the aspirator on Feb. 10th. During this interval there were nightly sweats, and the variations between morning and evening pulse ranged, on an average, 25 beats—on the 6th from 88 to 124, and that of the temperature from $98^{\circ}.4$ (normal) to 103° – 104° . The pulse was very small, intermitting every 5th or 7th beat.

The effusion was evidently limited to the upper and middle parts of the chest, for while on the 10th Feb. the left side, on the level of the xiphoid cartilage, exceeded the right by $\frac{1}{2}$ inch, the upper part was $1\frac{1}{2}$ inches larger. I was anxious to let out the pus on 4th, but the patient was so nervous, and thinking that, as his

breathing was not so much affected as before, affairs could not be so bad as before, he would not allow me to operate.

The tapping was performed to-day (10th February) above the 6th rib, and I drew off about 60 ozs. of straw-coloured healthy pus. The operation was well borne, and was followed by expansion of the lung, and amelioration of all his symptoms. The evening temperature sinking to 100° on 12th, and to 98·4° on 13th, and on the same evening the pulse fell to 86. The exacerbations of fever, accompanied by restlessness and sweating, which generally came on at 5 o'clock p.m. were checked considerably by a little egg-flip, given at 4 o'clock. For this valuable suggestion I am indebted to Dr. Hawtrey Benson.

The heart returned again to the left of the sternum, and the left side measured now the same as the right, but the posterior border of the left scapula was approximated to the vertebral column by an inch less than the right, and dulness persisted in the axilla and round by inferior angle of the scapula.

On 11th February I allowed him a chop or fowl, in addition to beef-tea, milk, 2 eggs, 8 ozs. wine, and 2 ozs. of brandy.

In 10 days later the return of the effusion required a *fourth* tapping, when 40 ozs. were let out; the latter portion was slightly sanguinolent. In the hope of exciting a healthier action, I injected into the pleura 8 ozs. of warm water, and having drawn it off again, I strapped the side, so as mechanically to diminish the secreting surface. I had found such benefit and relief to the patient by the use of mechanical rest in pleurisy, that I considered it might also prove beneficial in empyema. It gave him much comfort and confidence in moving about in the bed.

On 23rd he was allowed up for half an hour, and on 25th for an hour. He slept well after these days, and is now able to lie in the horizontal posture. The air entered as low as the nipple, with a remarkable crackling sound. Pain was occasionally felt in the left side of the abdomen, but it seemed due more to flatulence than the pulling up of the stomach under the left side of the diaphragm, as an oil draught, with tinct. opii, always relieved it. The patient is now very thin, and probably looks worse than he is, because the œdema of the legs and feet, as well as that of the side, had passed away. The left shoulder droops somewhat, the lower edge of the clavicle being prominent and sharp, the bone being turned on its axis, similar to that shown by Dr. Stokes to occur in chronic phthisis.

March 1st.—To-day, again, there is evidence that the pus is reforming and filling the pleura, but, although such is plainly taking place, there is no sweating, and the patient lies low in bed, breathing easily, without any cough, and sleeping well. Pulse, however, is again very fast, 120 in the morning and 132 in the evening.

On 3rd March the dulness is complete, as before, all over left side, with the same diastolic impulse under clavicle and in axilla, which evidenced effusion on former occasions, and the left side was three-quarters of an inch larger than the right when measured above the nipple; below this both measured the same. Thoracentesis was therefore again performed about an inch to the left of the nipple, and as the patient greatly dreaded the puncture, the ether spray was employed to deaden the pain. Owing to the great overlapping of the ribs, the needle had to be directed upwards and inwards.

Forty-eight ounces of pus were evacuated; the pus was greenish, and so foetid that the nurse holding the basin became almost sick. I continued the operation until the fluid became thick and slightly sanguinolent, and the patient complained of feeling "something hurting and sticking him"—most probably it was the end of the canula which was pressed upon by the expanding lung. As I withdrew the instrument, I passed through it a bent double of silver wire, which I left in the wound, as I had not with me any drainage tubing; for, had I had such, I would have at once employed it. The wire, I hoped, would be sufficient to keep the wound open and give vent to any gases or pus which might be expected to re-accumulate in a short time. As usual after formerappings, the pulse and temperature came down the next day—the one to 112 in the evening, and the other to 99° 6.

5th.—The percussion note was slightly but distinctly tympanitic, showing the gases had, as I expected, been formed in the pleural cavity, though, contrary to my expectations, they had not made their way out by the fistula I had instituted. The signs of pneumo-thorax were still better marked the next day, metallic tinkling being well developed, with metallic voice; but of course there was no amphoric respiration.

It became, therefore, necessary to give free vent to the pleural contents, and as this could not be done, with due regard to exclusion of the external air, owing to the lung not expanding enough to fill the vacuum the aspirator might produce, I increased the wound and introduced a drainage-tube through the single opening, the free end

of which I fixed to the side with adhesive plaster. A quantity of most foetid gas escaped during the operation, and 20f $\frac{3}{4}$ of foetid pus were drawn off. This was the *sixth* tapping, and the amount altogether drawn off by the aspirator was therefore 272f $\frac{3}{4}$, or 13 pints 12f $\frac{3}{4}$. For some days after, the percussion note showed that adventitious air existed within the chest wall, and indeed with every act of respiration the air whistled in and out of the fistula. Vast quantities of pus ran from the wound and through the tube; and this especially on the patient's sitting up. On the 10th it was estimated as a pint a day. Most remarkable, however, was the effect of the tapping upon the constitutional symptoms; for not only were there no longer any night sweats, but the pulse became regular, though very weak and compressible, and the temperature fell to 98°·6 on the evening of 9th, 98°·3 on 12th, and 98° on 14th. In fact, from the day of the introduction of the drainage-tube, all febrile symptoms disappeared (with the exception of a slight rise on 16th). On 14th the patient was allowed to sit up, and was put upon cod-liver oil, followed by a vegetable tonic and acid mixture. From this day till he left hospital he daily recovered strength, and became quite fat.

On 18th, as with each act of respiration the air continued to whistle in and out of the wound, I strapped the chest tightly with adhesive plaster, so as to limit its action, hoping thereby to give the lung time and chance to expand; the fistulous vent was carefully avoided by the strapping. From this treatment he experienced great comfort, the pus diminished, and, except when he coughed, no whistling was heard. On 20th the pus ceased to run; no more escaped till 27th, when the tube was withdrawn.

He left hospital on April 6th.

I saw him again on April 21st, after his return from the Convalescent Home, and again on last Saturday, May 9th.

The following is his present condition:—He walks with a slight stoop, the left shoulder being a little lower than the right. The chest wall is well covered with fat, and his limbs have recovered their former size and vigour to a great extent. There is a puckered cicatrix at the seat of fistula, but all discharge has ceased for some weeks. Measurement of chest an inch above the nipple, 33 $\frac{3}{4}$ inches; right side, 17 $\frac{1}{2}$; left, 16 $\frac{1}{2}$ = 1 $\frac{1}{2}$ difference. Below nipple, right side, 17 $\frac{1}{2}$; left, 16 $\frac{1}{2}$ = 1 $\frac{1}{2}$ difference. Distance from inferior angle of scapula to vertebral spines on right side, 3 $\frac{1}{2}$ inch; on left, 2 $\frac{1}{2}$ = 1 inch difference. Percussion the same as in infra-clavicular and

mammary regions, in left infra-mammary tympanitic, evidently due to the stomach, which is drawn up under the ribs; posteriorly, dulness below left scapula and in the scapulo-vertebral space. Vocal vibration distinct anteriorly and posteriorly, but not well marked in posterior left. Auscultation normal in anterior parts, but distant and slightly tubular posteriorly and below on the left side. The cardiac impulse is felt to the left of normal and a little higher. Cardiac area of dulness natural, and there is entire absence of evidences of hypertrophy or valvular lesions.

His appetite and general health are good, and he can walk a very fair distance without fatigue.

The foregoing case presents so many points on which it would be possible to make comments that, lest I might still further err and tax the patience of the Society too far, I shall refrain from any remarks upon the incidents of the case or the mode of treatment, and content myself by simply summarising the various facts of the case.

The following was the sequel of events:—

1. Pneumonia of left lung on January 5th, which has never fully resolved.

2. Inflammation of the pleura costalis.

3. Pericarditis from extension of inflammation from pleura.

4. Effusion into pericardium.

5. Effusion into pleura, with displacement of heart.

6. Absorption of pericardial fluid; increase of pleural effusion, with œdema of feet.

7. Thoracentesis, with return of heart, and relief and abeyance of all distressing symptoms.

8. Dry pleurisy of right side.

9. Empyema, with hectic symptoms. Thoracentesis four times employed.

10. Pus fetid, and development of gas. Empyo-pneumothorax; pleura washed out with warm water.

11. Fistulous opening maintained; free entrance of air and exit of pus; diminution of all febrile and constitutional disturbance.

12. Steady gradual improvement; strapping of chest; diminution and arrest of pus; return of lung to pleural cavity; non-expansion of lower lobe, with consequent falling in of side; approximation of scapula to spine, and up-drawing of the stomach.

ART. XXIV.—*The late Epidemic of Scarlatina, as observed in the Mater Misericordiæ Hospital.* By THOMAS HAYDEN, Fellow of the King and Queen's College of Physicians; Physician to the Hospital.

It was originally my intention to lay before the Medical Society of the College of Physicians the following brief abstract of the cases of scarlatina, treated in the Mater Misericordiæ Hospital, during the year commencing January 4, 1874, and ending January 4, 1875. Circumstances prevented the fulfilment of that intention, and I now submit these notes as a supplement to the recent discussion on scarlatina before that Society. The cases have been classified under three heads, viz.:—

(a.) "Mild," in which the eruption was florid, the throat but slightly engaged, and no complication existed.

(b.) "Severe," or those in which the fever was high, and accompanied by a copious and florid eruption of a somewhat miliary character, diffuse inflammation and ulceration of the tonsils and fauces, delirium, and diarrhœa.

(c.) "Malignant," or cases in which the eruption was dusky and imperfect, the surface in some degree livid, the temperature low, the throat in a sloughy condition, and in which, moreover, diarrhœa, vomiting, suppression of urine, and coma, were exhibited.

The total of cases was 105—viz., "Mild," 73; "Severe," 24; "Malignant," 8.

The "Mild" cases, of which, in twenty-four instances, the patients were over four and under ten years old, and in forty-nine, over ten years, all recovered.

The "Severe" cases yielded a mortality of fifteen out of twenty-four; of the fatal cases four were under ten years, and eleven over that age.

The "Malignant" cases amounted to eight—viz., three under ten years, and five over ten years. All these were fatal.

No case was presented under four years of age.

The treatment adopted in the "Mild" cases consisted in the administration of the chlorate of potash with dilute hydrochloric acid (five to ten grains of the former, and five to ten minims of the latter, with syrup and water, every third hour); astringent gargles, compound powder of chalk as demanded by the state of the bowels, and fifteen to twenty grains of the bromide of potassium at night. The average period of illness was twelve days.

In the "Severe" cases the same treatment was pursued, with the addition of the free application of the glycerine of carbolic or of tannic acid to the fauces, and of poultices to the neck. Average duration of illness twenty days.

The "Malignant" cases were treated chiefly with diffusible and alcoholic stimulants; the average duration of illness was twenty-six hours.

The complications were almost exclusively anasarca, glandular inflammation and suppuration in the neck, and bronchitis. Anasarca was exhibited in a very large number of cases, chiefly those of a mild character, during convalescence. Consecutive abscesses in the neck were of very frequent occurrence; but, in almost every instance, the patients recovered. Bronchitis, which was occasionally attended with interstitial congestion of the lungs, was developed in the course of the fever. Most of these cases terminated favourably, but pulmonary tuberculosis followed in a few instances.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Infant Diet. By A. JACOBI, M.D.; Clinical Professor of Diseases of Children, College of Physicians and Surgeons, New York. Revised, enlarged, and adapted to Popular Use. By MARY PUTNAM JACOBI, M.D. New York: G. P. Putnam's Sons. 1874. Pp. 119.

THAT the enormous mortality among children under one year of age, amounting, as we have shown in a former number of this Journal,* to an average annual rate in England of 165·6 per 1,000, is, in a great measure, due to preventable causes, cannot be doubted. One of the chief sources, perhaps, of this destruction of life arises from an ignorance, on the part of mothers and nurses, of the simplest principles of infant dietetics and of the commonest physiological laws. The object of this excellent little volume is to give popular instruction, as regards the child, on these important points, not alone by answering the question, "What shall it eat?" but also by setting forth "some of the most assured facts in the possession of science in regard to the chemical changes that take place in the infant economy during the process of nutrition, and in regard to the means of averting morbid alterations in these changes."

Starting with the axiom that mother's milk is the most appropriate food for an infant in all its stages of development, the author proceeds to enumerate and analyse the conditions, both as regards the mother and the infant, which may contra-indicate nursing or render it undesirable. The composition of the human milk, the changes in its individual constituents under various conditions, the effects of such on the child, and the part which each plays in its nutrition, are described in clear and as untechnical language as possible. For example, we may quote the following passage:—

"The function of sugar is partly the same as that of fat, that is, it contributes largely to the production of heat. Its heat-making power is

* Dublin Journal of Medical Science. Oct., 1874. P. 341.

only about one-half that of fat, but, during its passage through the body, sugar becomes partly converted into fat, and then it serves precisely the same purposes as the latter substance. Sugar is liable to ferment in the digestive canal, especially in the mouth, if long retained there, and then acids are formed which irritate the mucous membrane. Many cases of sore mouth in bottle-fed babies is due to the excess of sugar added to their food. In human milk, the sugar is rarely in excess, although this has been observed in the watery milk of anæmic women (Routh). It is much more often deficient. The effects of such deficiency will be partly the same as we have noticed when butter was deficient—for the reason that sugar partly supplies the place of butter, and partly is converted into it. But other substances that result from the decomposition of sugar are of importance in many ways. Lactic acid is formed in the stomach, helps to give acidity to the gastric juice, and thus assists in the digestion of caseine. It will be shown further on that the presence in the stomach of substances soluble in water, as sugar, accelerates the digestion of insoluble substances, as caseine. (Schiff.)

“When food is digested rapidly in the stomach, it is thrown more rapidly into the intestine, and the peristaltic movements of the intestine are accelerated. But when food arrives too slowly in the intestine, it is stimulated too slowly to contract, and, to use the popular phrase, ‘the bowels become sluggish.’ It is probably in this way that milk in which sugar is deficient frequently becomes a cause of constipation in the child; and that, on the other hand, infantile constipation may often be relieved by the addition of sugar to the food.* The diminution of sugar frequently coincides with a surplus of caseine.”

Dr. Jacobi fully explains the various steps in the process of infantile digestion, and the chemical changes which occur in the food in its passage through the various portions of the alimentary canal, illustrating his remarks in many places by examples drawn from recent physiological researches—*e.g.*, Korowin's experiments upon the saliva of infants and the action of the pancreas upon starch. He then proceeds to contrast digestion in the infant and in the adult; and discusses the infant's typical food—milk. To remedy the symptom of indigestion caused by excess of caseine in milk, whether in the cases of children at the breast, or, as more commonly happens, in those fed upon cow's milk, the author strongly recommends the dilution of the milk. For this purpose, in very young infants, he employs a thin and transparent mucilage of gum arabic, and in older children, who may require a substance

* One or two scruples, about two-thirds of a teaspoonful, of loaf sugar, are dissolved in two teaspoonfuls of tepid water, and given just before nursing.

which will act as a nutriment at the same time, a decoction of barley, or, if there be a decided tendency to constipation, of oatmeal. "This dilution," he says—

"Acts in two different ways. In the first place it favours the absorption of a soluble substance into the blood, and thus provides for the secretion of pepsine to digest the insoluble, the caseine. In the second place, it dilutes the acid of the gastric juice, and thus prevents it from coagulating the caseine too firmly. In a word, as might be expected, the addition of water to milk helps the digestion in precisely the way that the water originally contained in the milk is intended to do. Where the child is fed by hand, of course the diluting fluid is easily added to the milk in the bowl. Where it is at the breast, the same end is reached by giving a tablespoonful or more of this fluid just before nursing."

In speaking of the relations of the phosphates in the milk to different processes of nutrition, Dr. Jacobi ascribes the immediate causes of rickets to—

"1st. Deficiency of phosphates in the food to supply the place of those consumed in the organism. 2nd. Excessive formation of acids in the digestive tube, which, being absorbed into the blood, dissolve out the phosphates already fixed in the body, especially in the bones, and carry them off in the urine."

This view, however, as to the etiology of the disease, is by no means now an "assured fact." The disease-process in rickets is apparently more an arrest of the deposition of the calcareous salts in the bones, from some as yet unexplained cause, than a simple chemical redissolving of the already perfect bone by an acid. (Vogel.) Besides, according to Niemeyer, the increase of lactic acid and phosphate of lime in the urine of rachitic children is not constant. And the excessive excretion of phosphate of lime through the urine may just as well be the result as the cause of the lime-salts not being deposited in the bones.

In many cases of vomiting that depend upon an insufficient formation of pepsine, Dr. Jacobi thinks that injections of solutions of dextrine, as recommended by Schiff, would enable the stomach to resume its functions. The causation of infantile diarrhoea, especially that form (cholera infantum) set up by the exhaustion of the nervous system resulting from summer heat, is very fully considered; and we would particularly notice an able summary of the

various derangements in the intestinal digestion, classed according to the nature of the stools, with the treatment suited to each form, until medical advice is required. The essay concludes with a few brief and easily-intelligible rules on the feeding of children in general, which we would be glad to see widely circulated and adopted in this country. Altogether the work is one of great merit, and one which might be read with great advantage by any medical man desirous of becoming acquainted with the most recent views on the subject of infant digestion, and with the result of the author's long experience as to the best mode of feeding children. The omission of an index, or of a division of the book into chapters, is, we think, a mistake.

The Functional Derangements of the Liver. By CHARLES MURCHISON, Esq., M.D., LL.D., F.R.S. London: Smith, Elder, & Co, 15, Waterloo-place, 1874. Pp. 182.

THESE Lectures, which fully sustain the author's well-earned reputation as a practical authority on hepatic ailments, were delivered before the President and Fellows of the Royal College of Physicians, in March, 1874 (the Croonian Lectures for that year), and were subsequently published in *The Lancet* and *British Medical Journal*. At the request of many friends they have been republished in a separate form with several alterations and additions.

The author, in his preliminary observations, well remarks that professional opinion as to what constitutes functional disorder of the liver is vague and unsatisfactory. There is no expression more common among both patients and their doctors, than that the "liver is out of order," or that certain symptoms are due to "biliousness," and yet few medical writers have undertaken to define, with accuracy, what symptoms are referable to a disordered liver. Referring to the functions of the organ in its healthy state, he observes that it is not a little remarkable that modern investigations have tended to reproduce, in a scientific form, certain crude opinions entertained by the earliest writers on medicine. The physiological investigations made within the last quarter of a century have, in a great measure, restored the liver to its former place of importance in the animal economy; they have shown that the secretion and excretion of bile are far from being the most, if they be not the least, important of its functions; and they have, consequently, added to the number of its functional derangements.

This re-establishment of the importance of the liver in the economy is the result of the facts that it is now known to be one of the organs mainly concerned in the process of sanguification, and, furthermore, that it contributes, in a great degree, to the destruction of albuminous matter derived from the food and textures, and the formation of urea and lithic acid, which are subsequently eliminated by the kidneys. Its third and long-known office is the secretion of bile, a substance of very complex composition, and with whose uses we are as yet insufficiently acquainted. Objecting to existing classifications of the functional derangements of the liver, such as that of the late Dr. Copland—diminished secretion of bile; increased secretion of bile; secretion of morbid or altered bile, as failing to recognise the most important functions of the liver—the author suggests another, based upon what are now believed to be the normal functions of the gland, and upon the symptoms which a disordered liver may excite in the different physiological systems of the body. His classification is—1. Abnormal nutrition; 2. Abnormal elimination; 3. Abnormal disintegration; 4. Derangements of the organs of digestion; 5. Derangements of the nervous system; 6. Derangements of the organs of circulation; 7. Derangements of the organs of respiration; 8. Derangements of the urinary organs; 9. Abnormal conditions of the skin. Having discussed each of the derangements comprehended under these headings, the author refers to their causes, and finally enters upon the treatment of functional derangements of the liver, in reference to which he observes that much more permanent benefit is to be expected from careful regulation of the ingesta than from physic. Habitual lithæmia often results from the patient taking more food than can be converted into tissue or disintegrated in the liver. The hepatic derangement resulting in lithæmia may exist for years without any other symptom than the frequent deposit of lithates or lithic acid in the urine, and is then curable by attention to diet alone, but if neglected may ultimately develop gout, structural disease of the liver or kidneys, or some other serious malady. Next to careful regulation is a free supply of oxygen. The clinical proofs of the efficacy of mercury in certain derangements of the liver are overwhelming to the author's mind. The book concludes with many practical remarks, forming a most convenient compendium of scientific information upon a rather obscure subject.

WORKS ON URINARY ANALYSIS.

1. *A Guide to the Examination of the Urine.* By J. WICKHAM LEGG, M.D. Third edition. London: H. K. Lewis. 1872. Pp. 96.
2. *A Guide to the Practical Examination of the Urine.* By JAMES TYSON, M.D. Philadelphia: Lindsay and Blakiston. 1875 Pp. 182.

DR. WICKHAM LEGG is entitled to an apology from us for not sooner having noticed his neat and useful little book. He has included in a very small space a great deal of reliable information respecting the clinical examination of the urine, and we can with sincerity recommend his "Guide" to clinical clerks and students, for whom it is chiefly designed by the author. In describing Fehling's test for sugar, some authors appear to be over-particular as to the method of using the test-solution. Dr. Legg says (p. 23):—

"About a couple of drachms of this test-solution are poured into an ordinary test-tube, and the fluid boiled over a lamp. If no deposit occur, the solution may be used for analysis; but if a red precipitate be thrown down, the liquid has decomposed, and a fresh supply must be obtained. While the solution is boiling in the test-tube, the urine must be added to it drop by drop, and the effect watched," &c.

Dr. Tyson, whose "Guide" we shall have to speak of more particularly, writes to the same effect.

Now we have always found that adding a few drops of a tolerably fresh copper solution to a couple of drachms of urine in a test-tube, and then boiling the mixture, was sufficient to indicate the presence of even a minute quantity of sugar. This plan is much less wasteful of the test-solution than the process recommended above. In speaking of urea, Dr. Legg tells us to evaporate two or three ounces of urine (freed from albumen, if such be present) to the consistence of a syrup, and then to add pure nitric acid *guttatim*. But in practice nitrate of urea is frequently obtainable *without* any concentration of the urine whatever. We have found this to be so in 36·8 per cent. of a large number of analyses. And by moderate concentration of the urine in the first instance it is far easier to judge of the probable quantity of urea present in a given specimen. An "Appendix" contains a succinct account of

the method of performing quantitative analyses of the principal substances found in the urine. Three woodcuts, representing uric acid, ammoniaco-magnesian phosphate, calcium oxalate, and tubercasts, are not all that can be desired, although they give the student a fair idea of these substances.

Dr. Tyson's book is both larger and bears a more scientific stamp. It is beautifully and accurately printed, being illustrated by drawings, mostly copied from Harley, Ranke, Beale, Pavy, Rindfleisch, &c., and by a carefully-executed plate, which represents the "pigment-flakes," first noticed by Roberts. These particles, so often met with and so often a puzzle to the beginner in microscopy, are thus described by Dr. Tyson, although the correctness of his views as to their nature may be questioned:—

"Their appearance is that of little pigmented flakes which may be roughly compared in outline to squamous epithelial cells, such as come from the cutaneous epiderm, and have soaked a little while in water; yet while they are well-defined throughout most of their periphery on one side, they generally shade off and become gradually invisible. This may be due to the distribution of the reddish-brown granules, which are generally more closely placed in one part, being so numerous as to make the flake opaque or nearly so; from this they shade off in the manner described, disappearing altogether as the edge is approached. At other times the flake is filled throughout with pigment, when it appears dark, almost opaque, and equally well defined on all sides. The size of these 'flakes' or 'particles' is very various, from $\cdot 008$ millimetre to $\cdot 025$ millimetre ($\frac{1}{3000}$ to the $\frac{1}{1000}$ of an inch); the majority, and those which usually strike the attention, are of the latter size.

"Strange as it may seem, the appearances are nothing more nor less than stained 'markings' or 'fractures' upon the glass. This was only recently pointed out to me by my friend Dr. J. G. Richardson, and I have since amply confirmed the observation. I had myself often recognised and demonstrated markings of similar contour on glass, but these were not pigmented; and the first conclusion to which Dr. R. and myself came was that the pigment flakes were the same scratches which had become filled with the colouring matter of blood or other substance which could not be removed by ordinary wiping and cleaning; but a trial with potash on the one hand and nitric acid on the other failed equally to remove them. What they precisely are, therefore, I do not as yet know; but their real nature thus far determined, there now appears abundant reason why it might before have been suspected, among which is pre-eminent the constancy of their occurrence, whatever the object examined."

Treating of the "Biliary Acids," the author expresses his thorough want of confidence in Pettenkofer's test as a trustworthy guide. From a number of experiments, he concludes that the simplest method of obtaining the biliary acids is the following:—

"Six or eight ounces (180–240 c. c.) of the suspected urine are evaporated to dryness over a water-bath. The residue thus obtained is treated with an excess of absolute alcohol, filtered, and the filtrate treated with an excess of ether (12 to 24 times its bulk), by which the bile-acids, if present, are precipitated. These are then removed by filtration and redissolved in distilled water. The solution is then decolorised by passing through animal charcoal the resulting colourless fluid, tried by Pettenkofer's test as follows:—A single drop of a 20-per-cent. solution of cane-sugar (simple syrup of the Pharmacopœia is many times too strong) is then added to a drachm or two (3·7–7·4 c. c.) in a test-tube or porcelain capsule. Sulphuric acid is then added drop by drop, while the test-tube is kept in a vessel of cold water, to prevent too great a rise in temperature, which should not exceed 50°–70° C. (122°–158° F.). As the quantity added approaches a bulk equal to that of the fluid tested, a beautiful *cherry-red* or *purple-violet* colour should make its appearance. So soon as a yellow colour makes its appearance, then the sulphuric acid is acting on the sugar, and the cherry red can no longer be looked for. This carbonising of the sugar is obviated by keeping the temperature down to the degree mentioned."

On page 87, Schiff's carbonate of silver test for uric acid is given; but "Urea" is misprinted for "Uric Acid." The context, however, nullifies the effect of this printer's error. The illustrations of triple phosphate do not include a drawing of one very beautiful form of this salt which is figured in Dr. Beale's work,^a and of which we have seen more than one most perfect specimen. On page 121 a sentence occurs with which we cannot agree:—"There are no means," Dr. Tyson says, "by which the presence of oxalate of lime may be foretold before a microscopic examination of the urine is made." Dr. Wickham Legg more correctly includes in a list of the more common urinary deposits one of calcium oxalate, which he defines as a "hummocky white sharply-defined cloud, insoluble in acetic acid." This is what we described some years ago, when reviewing Dr. George Harley's work on the "Urine and its Derangements,"^b as "a very beautiful physical

^a *Kidney Diseases, Urinary Deposits, and Calculous Disorders*. Third edition. London: 1869. Plate XX., Fig. 111. Pp. 356.

^b See *Dubl. Journ. of Med. Science*. Vol. LIV. 1872. P. 11.

proof or sign of the presence of the salt (calcium oxalate)—namely, a wavy appearance assumed by the upper surface of the deposit, closely resembling masses of ‘wool-pack’ cloud.”

The section of Dr. Tyson’s book which is devoted to a consideration of the colouring matters of the urine is especially interesting. He closely follows the modern German authors, Hoffmann and Ultzmann, here as elsewhere. While remarking on the unsettled state of the question at present, he observes that we may safely assume the existence of two colouring matters in normal urine—

1. *Urohæmatin* (Harley and Scherer), or *Urophæin* (Heller).
2. *Indican*, or the *Uroxanthin* of Heller.

The abnormal colouring matters are—

1. The colouring matters of the blood—(a.) *hæmoglobin*, (b.) *methæmoglobin*, and (c.) *hæmatin*.
2. The *Uroerythrin* of Heller.
3. Vegetable colouring matters.
4. Biliary colouring matters.

Under Class 3 the author refers to Dr. W. G. Smith’s experiments on the action of santonin on the urine, which appeared in this Journal.*

In heartily commending this book to all clinical workers, we should not omit to mention that Dr. Tyson devotes a chapter to the “Differential Diagnosis of Renal Diseases.” It is concise, and, better still, correct; and adds materially to the value of the work.

J. W. M.

* See *Dubl. Quart. Journ. Med. Sci.* Nov., 1870.

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WM. THOMSON, A.B., M.D., and Ch.M., Q.U.I.; Surgeon to the Richmond, Whitworth, and Hardwicke Hospitals; Fellow and Examiner, Royal College of Surgeons, Ireland; late Lecturer on Anatomy in the Carmichael School of Medicine, &c.

THE STRUCTURE OF THE TRUE NECK OF THE FEMUR IN ITS RELATION TO FRACTURE.

IN some recent numbers of one of the American medical journals,* Bigelow has a paper upon the structure and pathology of the true neck of the femur. He has already published a work^b which shows him to be entitled to a respectful hearing. Merkel,^c Wolff,^d and Culmann, in Germany, have also given the results of their investigations, and it is with special reference to some of their conclusions that Bigelow now contributes his own observations. In his original work he gives directions for making the necessary sections of the bone, and these may be thus summarised. A well-developed femur is to be placed in a vice, with its back towards the observer, in its natural upright position, but obliquely, as if the legs were widely separated, the shaft being so far inclined that the neck is horizontal. The neck is then to be divided into four horizontal slices of equal thickness. It will be found that the anterior wall becomes of great thickness and strength, while the posterior remains thin, especially at its insertion beneath the posterior inter-trochanteric ridge, where it is of the thinness of paper. In the lower section it will be found that the papery wall is prolonged by radiating plates into the cancellous structure beneath the inter-trochanteric ridge. The thickest of these will be seen as a dense plate continuous with the back of the neck, and

* The Boston Medical and Surgical Journal. Vol. XCII., Nos. 1 and 2.

^b The Hip. H. C. Lea, Philadelphia. 1869.

^c Virchow's Archives. 1874. Vol. LIX.

^d Ibid. 1870. Vol. L.

reinforcing it, plunging beneath the inter-trochanteric ridge in an endeavour to reach the opposite and outer side of the shaft.

Merkel calls this the "Schenkelsporn," or thigh spur, and his object is to prove its predominant importance in sustaining the weight of the body, and that the strength of the neck of the femur is mainly due to it. It is the function of this plate that Bigelow also discusses. "It plainly adds a certain strength to the bone, and yet in most bones it terminates beneath the trochanters in papery lamellæ, wholly inadequate to lend it material support. It is usually united, even to the trochanters, only by a delicate wall and spongy tissue. It obeys the laws of similar bony structure, being feebly developed in childhood; while later in life its absence in the femoral neck impresses us, as do bone-sections generally, with the truth of the observation of Henle, that the so-called brittleness of age depends not so much on the loss of animal substance as upon the atrophy of the bony walls and interior structure. These varying appearances might well leave us in doubt as to the purpose of the osseous plate, but no doubt can exist in the mind of one who examines an exceptionally well-marked adult bone." But such are very rare. The true neck is often at best but an ineffectual attempt to bridge the interval beneath the trochanters, while in the latter half of life it degenerates into papery plates radiating downwards from a point near the lesser trochanter. Even the adult femur is generally defective in construction at this point; and here occurs the posterior impacted fracture of the *base* of the cervix, which Bigelow declares to be the most common of fractures of the neck of the thigh-bone.

That it has not been so considered he explains by the circumstances that it has only been lately recognised; that the injury may be slight; that in some cases there is hardly perceptible eversion and shortening; that there may be no subsequent noticeable lameness. On the other hand, unimpacted fracture of the small part of the neck, usually supposed to be most common, is marked by prominent symptoms, with great and persistent lameness.

In these cases of fracture of the base of the cervix, the posterior wall only, where the bone is a mere shell, is impacted at the inter-trochanteric line—the true neck, or the remains of it, being driven further between the trochanters, sometimes detaching them. "The firm anterior wall resists impaction, but bends at the line of fracture as a hinge. If this hinge were vertical the shaft would be only everted, while if it were transverse the neck would be only

bent and the leg shortened. But as the hinge stands at an angle of about 45° , shortening and eversion are nearly equal. Impaction, when slight is detected by a difficulty of inverting the foot, rather than by actual eversion, and the shortening may seem doubtful." Shortening and eversion, however inconsiderable, point directly to this lesion. Bigelow believes that "familiarity with the posterior impacted fracture of the base of the neck will remove the most frequent source of doubt in the diagnosis of injuries of this region, and the sooner the old classification of "intra and extra capsular fracture is abandoned, the better it will be for science, for diagnosis, and for treatment. In the interest of the patient and of treatment, the question should be—'Is the fracture loose or impacted?' and science is often compelled to rest satisfied when this is settled."

SUB-HYOIDEAN LARYNGOTOMY (? PHARYNGOTOMY).

Under the title of sub-hyoidean laryngotomy Dr. Geo. Lefferts publishes the particulars of a case in which he performed an operation for the removal of a catch-ring, used in fastening a locket, which had become impacted in the larynx.^a This method has only been followed in five cases,^b as reported, and had never before been attempted in America. A child two years and a half old swallowed a ring such as described. Urgent dyspnoea followed, and a bystander endeavoured to relieve the symptoms by pushing the ring down with her finger. During four succeeding years the child had various symptoms referable to the larynx, which, however, was never examined until the patient came under the observation of Dr. Lefferts. The ring was discovered lying with about one-third of its circumference hidden by the middle of the false cord and ary-epiglottic fold of the left side. It reached inwards at about the level of the vocal cords, until it overlay the right vocal cord, thus presenting a direct barrier across the larynx. About two-thirds of the ring were thus presented to view, and it hung in position in the same manner as an ear-ring is held in the ear.

After consultation, the sub-hyoidean operation was determined upon. It was deemed advisable to perform tracheotomy in the first instance. There was some difficulty in recognising the position of

^a New York Medical Record. Dec. 15, 1874.

^b *Prat. Gazette des Hopitaux*, 1859, No. 103. Langenbeck, *Allgemeine Medicinische Zeitung*, 1870, No. 8. Follin, *Archives Generales de Médecine*, Février, 1867. Debrun, *Allege. Med. Zeitung*, 1870, No. 9. Langenbeck—*ibid*, 1870, Nos. 9 and 10.

the hyoid bone, owing to the smallness of the parts. An incision was made parallel with the lower border of the hyoid, and a careful dissection made down to the membrane, which was then divided, but to a less extent than the superficial wound. Here the difficulty of the operation began. The descriptions by Malgaigne,* Prat, and Follin, do not correspond with Lefferts' experiences.

"My dissections and experimental operations upon the cadaver have shown me that, after the thyro-hyoid membrane has been divided transversely, a thick layer of cellular and adipose tissue, extending usually from the hyoid bone above to the thyroid cartilage below, forming the cushion of the epiglottis, and lying between it and the parts external, presents itself; to either side of this mass mucous membrane protrudes. This membrane consists of the broad anterior portions of the ary-epiglottic folds at about the point where they join with the sides of the epiglottis—is therefore *laryngeal mucous membrane*, and an incision made through it transversely and directly inwards, or even with the point of the knife directed upwards and backwards, would open directly into the *laryngeal cavity*, not alone by cutting through the anterior extremities of both these folds, but in so doing necessarily dividing also, by the transverse incision, the cellular and adipose mass lying in front of the epiglottis and between them, would cut through this cartilage at about its middle, or a short distance below that point."

This accident actually happened to Follin.

Lefferts thus describes the course to be followed:—

"How, then, are we to avoid section of the base of the epiglottis? By, after having reached this point in the operation, inserting a tenaculum into the cellular and adipose mass described above, and by means of it drawing the epiglottis forcibly downwards. This puts its ligamentous attachments to the hyoid bone and tongue upon the stretch, draws it away from the former, and leaves an appreciable interval of space between them through which the knife, its point directed upwards and backwards, and kept near the hyoid bone, can be readily passed, and will be found to have penetrated the mucous membrane between the base of the tongue and the epiglottis, the aim of the incision.

"The epiglottis being drawn downwards in this manner, mucous membrane will still present itself laterally; but a moment's reflection will show that this is no longer laryngeal. The displacement of the epiglottis has carried downwards with it both ary-epiglottic folds, and the mucous membrane which we now have presented is a portion of that situated between the base of the tongue and the epiglottis. The incision

needs now only to be carried through it on either side, including the few ligamentous fibres which run from the epiglottis to the hyoid bone, and which are seen in the median line; to lay open the pharynx, and to have the epiglottis present itself uninjured to view."

This having been done, the epiglottis was caught and drawn out through the wound, exposing the superior laryngeal parts. The ring was then seized by a forceps and withdrawn. The mucous membrane was first brought together, and the wound was closed. The patient was discharged on the twenty-first day quite well.

CAPSULATED SCIRRHUS OF THE BREAST.

Mr. C. J. Cullingworth, of Manchester, reports a case of capsulated scirrhus of the breast.* The woman was aged fifty-six. The tumour was about the size of the fist, non-adherent to the skin; the nipple was not retracted; there were no enlarged axillary glands. The first diagnosis was a non-malignant growth. A large mass was, however, found at a point corresponding to the pylorus. As food could not be retained, the patient died exhausted in about three weeks. A mass of scirrhus was found at the pylorus. The tumour in the breast was surrounded by a distinct thin fibrous capsule, nodulated, and somewhat indistinctly divided into lobules. It was composed of a fibrous matrix and of cells, these being from $\frac{1}{8000}$ in. to $\frac{1}{4000}$ in. in size. "In some parts they form cylindrical masses, bounded by a delicate membrane; these masses somewhat resemble gland ducts, filled with cells. No trace of lining membrane can be detected. Besides these elongated groups of cells there are seen rounded masses, corresponding in size to ordinary mammary lobules, and distinctly enclosed by a membrane." "Although the cells are smaller than those generally found in scirrhus, yet their distribution within a fibrous stroma places the tumour under the head of cancerous growths."

Velpeau believes that "scirrhus is never isolated in the mamma," and Paget asserts that "a scirrhus cancer in the breast has no distinct or separable capsule of cellular tissue investing it." Mr. Cullingworth observes that, in 1863, a tumour was removed from the breast in Leeds Infirmary, and was declared by Mr. Jessop and Dr. Hardwick to be capsulated—in some parts scirrhus, and in some encephaloid. Paget's assistant confirmed the opinion.

The author discusses the question—"Was this a tumour, originally

* British and Foreign Medico-Chirurgical Review. Jan., 1875.

non-cancerous, or was it cancerous from the beginning?" Velpeau is of opinion that mammary tumours remain innocent to the last, and are not susceptible of malignant or cancerous transformation. Paget says:—"On the whole one might expect that, if a woman have a tumour of this kind in her breast, cancer would be more apt to affect it as a morbid piece of gland, than to affect the healthy gland. But, I repeat, I know no facts to support this; and some that I have met with are against it." Erichsen^a is of a contrary opinion, and so is Skey.^b

In this case the tumour had existed seven years, but the external characters were not those which are ordinarily associated with scirrhus. "These facts, taken together, show one of two things—either that this is a scirrhus tumour, partaking much more largely of the characters of an innocent growth than any I have been able to find described; or that it was born non-cancerous, and having afterwards degenerated into a scirrhus (as a consequence, probably, of the development of scirrhus cancer in the stomach), still retained many traces of its original innocency. I think the latter will be allowed to be the more probable hypothesis." The practical lesson of the case Mr. Cullingworth believes to be—"If chronic mammary tumours may degenerate, as seems probable, in persons of a cancerous predisposition, into scirrhus or encephaloid, the risk of cancer appearing after operation is at least counterbalanced by the risk of cancerous transformation of the tumour, if left to itself. So that the question as to the propriety of removal, under such circumstances, will require reconsideration."

THE INTRA-VEINUS INJECTION OF CHLORAL.

The advantage of injecting solutions of chloral into the veins, for the purpose of producing anæsthesia, has, as is generally known, been lately advocated in France by Professor Oré, of Bordeaux, and a number of his disciples. The operation has not met any active approval in this country; and many leading French surgeons have condemned it with great severity. An elaborate defence of the proceeding has been published by MM. Deneffe and A. Van Wetter^c (Professeurs à l'Université de Gand), who certainly do not speak by any means flatteringly of the encouragement

^a Brit. Med. Journal. April 14, 1860. P. 281.

^b Med. Circular. XV., p. 26.

^c Mémoires Couronnés et autres Mémoires. Publiés par l'Académie Royale de Méd. de Belgique. Bruxelles: Henri Manceaux. 1874.

which progress in medical science has received from the French School.

The intra-venous injection of various medicaments into the veins is a very old operation; and it was upon the prosecution of experiments upon dogs, by the injection of chloral, in order to relieve the spasms caused by the administration of strychnine, that Oré first observed that total insensibility supervened. Two cases of traumatic tetanus soon occurred, and Oré commenced his experiments in this field by injecting twenty-eight grammes of chloral in a period of fifteen days. There was instant amelioration of symptoms after each operation. The patient seemed so well that the treatment was stopped, but he was then seized with spasms and died. In the second case the patient had been suffering for four days. In three days thirty grammes of chloral were injected in three operations; the symptoms improved, and the patient recovered. In these two cases there was profound insensibility for several hours after the operation.

The formula which Oré recommends is the following:—

Hydrate of chloral,	-	-	10 grammes
Distilled water,	-	-	30 grammes

The apparatus required consists of a glass syringe, graduated down to centigrammes, and containing half the quantity above stated; and a very fine "three-quarter" gold trocar and canula. A band is placed round the arm, above the point selected for operation, and when the vein has become sufficiently prominent it is pierced through the skin. The operator knows he is in the vein by withdrawing the trocar, when blood flows through the canula. The band is then removed, and the syringe is applied to the canula, but before doing this the blood should be seen escaping from it by a jet. The operation is to be conducted slowly. At first only 50 centigrammes are to be injected. If the patient bears this, we may go on to one gramme, and so on, pausing at each division to watch for symptoms. When the subject begins to complain of an inclination to sleep, we are to go slowly, as anæsthesia is not far off. The canula is withdrawn when insensibility is complete. Eight or ten grammes are usually necessary for an adult, but six or seven grammes are capable of producing the effects required. The duration of the operation ought not to exceed ten minutes. The injection should have the surrounding temperature. It is an indispensable precaution, however, to have an electrical apparatus at hand, in order to rouse the patient from his insensibility by

passing a current along the course of the pneumogastric, should that be deemed necessary.

M. Gosselin, one of the opponents of this operation, at the debates in the Academy of Medicine and the Surgical Society, stated four objections—1st, adhesive or suppurative phlebitis; 2nd, coagulation of the blood; 3rd, difficulty of producing anæsthesia; and 4th, alarming persistence of sleep. But it is replied that puncture of a vein by so fine an instrument does not produce inflammation. When that has followed phlebotomy it was owing to the clumsiness of the operator or to the indiscretion of the patient. In 198 well authenticated cases of transfusion of blood, slight phlebitis has only been noted twice; and in 20 injections of water, ammonia, and chloral, into veins of men by Oré, it has never occurred. 2nd. In 500 experiments by Oré, the formation of clot has not occurred once; and it has never been noticed in the extended experience of Vulpian and Colin. MM. Cruveilhier (fils) and Tillaux, however, found clots in the veins of two tetanic patients on whom they operated. But in the first case the vein was transfixed, and the injection escaped into the cellular tissue, producing abscess and sphacelus. After this Cruveilhier denuded the vein, incised it, and introduced the canula. Four veins were so treated, and at the autopsy clots were found. The contrary would have been surprising. In Tillaux's case the fluid escaped into the surrounding tissue at the first attempt, and three other punctures were made. Deneffe and Van Wetter insist that the difference of results is clearly explained by the difference of procedure. As to the other two objections they give a denial.

Verneuil and Forget have recalled the fact that the Italian surgeons use this process for the cure of varicose veins, by producing adhesive inflammation. But the authors reply that the objectors are comparing diseased and healthy tissues, and ask is there any point of comparison between the injection of chloral into the veins whose walls are so greatly altered—veins which are very frequently in a sub-inflammatory state, surrounded by ampullæ and lined with clots, in which the circulation is slow and sometimes stops, and the injection of the same substance into healthy vessels in which the blood is circulating freely?

Gosselin, Blot, Verneuil, Chauffard, all concur in their condemnation; and Lefort protests, "with indignation, against ideas and a practice which could only take their source in a profound contempt for human life."

The authors give a list of twenty-two cases in which they have adopted this method of producing anæsthesia. The longest period of insensibility was 3 hours, and of the duration of the "chloralic influence" 48 hours.

THE TREATMENT OF FISTULÆ.*

Mr. W. Allingham gives the results of his experience of the use of the elastic ligature in the treatment of fistulæ. This method was brought before the profession by Dittel, of Vienna, in 1873; but it appears certain that he had been anticipated by Silvestri, of Vicenza, in 1862, and by Henry Lee in 1870; and Holthouse claims priority for its use in anal fistulæ. The chief advantages claimed for it by Allingham are—painless operation, rapidity of cure, the ability of the patient to move about, its applicability especially to delicate patients, its bloodlessness, a minimum of suppuration, and the fact that an anæsthetic is usually not required. He has used it seventy-six times in all, and thirty-four times in fistulæ in ano, without a single bad complication. "In nineteen ligature cases the average time in the hospital was twenty-eight and a quarter days, while in nineteen selected incision cases (selected to exclude very bad ones) the average time was thirty-five days." In a case of ulcer of the anus, in a patient having the hæmorrhagic diathesis, the ligature was passed under the sphincters, and cut its way out in nine days.

The chief objection which has been urged against the employment of this plan of treatment hitherto is the pain caused by the tightening of the ligature, which is sometimes very severe and persistent. The author has learned to apply less pressure than formerly, and finds that pain is proportionately reduced. In a case in which the reporter, some time ago, applied the ligature in two fistulæ, he tied the second somewhat loosely, and although the cutting process was delayed, the patient suffered no pain, and a very long fistulæ filled up as the elastic passed through the included tissues. He was able to compare, in the same case, the results of the cutting operation, and he is able to say that the advantages were greatly on the side of the ligature.

MERCURY IN THE TREATMENT OF SYPHILIS.

The advocates of the treatment of syphilis by the administration of mercury have just had their position much strengthened by the

* *The Treatment of Fistulæ, &c., by the Elastic Ligature.* London: J. & A. Churchill. 1875.

return of Dr. C. R. Drysdale to their ranks, after a long secession. This gentleman is well known as one who has given a considerable amount of attention to this much-debated question. In a recent paper,^a read before the Medical Society of London, he has made a very ample recantation of the views which he has hitherto held. Convinced by the experience of Hutchinson, Ricord, Fournier, Acton, and others, he believes that when mercury is given on the appearance of the initial lesion, the disease seems to be sometimes cut short; and nothing more, perhaps, is seen of it in any form—at any rate the eruptive stage is absent. In the secondary forms of the affection he gives small doses of grey powder (two or three grains) daily, or one grain of the green iodide of mercury in twenty-four hours for a month at a time, leaving intervals of intermission from treatment so long as the secondary symptoms last. This course he adopts with the view of preventing the tertiary stage.

Is the administration of mercury productive of the tertiary developments of syphilis? Syme and Hughes Bennett maintained the affirmative, holding that mercury in large doses tended still further to depress the system, poisoned as it was by syphilis. Dr. Drysdale now joins Ricord and Fournier in the contrary view, and says:—"My own prolonged experience of the treatment of syphilis without mercury soon led me to see clearly two or three points. First of all I learnt that tertiary symptoms may arise quite without any mercury. But I also learnt, before I abandoned mercury, that persons treated carelessly by salivation and over-doses of mercury had sometimes extremely severe tertiary symptoms." He believes that the true secret is the administration of small doses of mercury over a lengthened period. Fournier recommends that it should be given for two years "in an intermitted manner—ten months with, and fourteen months without it."

IMPERFECT TEETH AND ZONULAR CATARACT.

In a very interesting paper read before the Pathological Society of London,^b Mr. Jonathan Hutchinson discusses the observation already made, that when children are the subjects of cataract, they usually show badly-developed teeth. Mr. Hutchinson has already made most valuable communications regarding syphilitic teeth in children, and his present investigations appear to have been carried out with his usual thoroughness. Imperfect teeth are, as a

Medical Press. Mar. 3, 1875, and March 10, 1875. Pages 179 and 202.

^a British Medical Journal. March 6, 1875. Pages 307 and 325.

rule, only met with in the lamellar or zonular form of cataract. The defect consists not so much in alteration of shape as in deficiency of development of the enamel; but it is often met with in association with the malformations which characterise hereditary syphilis. The incisors, canines, and first molars are the teeth which suffer most. As a rule, the bicuspid escape entirely. The first permanent molars, however, may be counted as the test teeth as regards this condition. "The incisors and canines are pitted, dirty, and broken, often presenting very sharp edges, and sometimes almost spinous. In some cases a horizontal line crosses the crown of the incisors and canines at one end, the part of the tooth below the line being narrower from before backward, sharp, and broken. Non-development of enamel and erosion of the exposed dentine appear to be the essential features." Mr. Hutchinson believes that the defects generally result from attacks of inflammation of the gums occurring in early infancy, and that amongst the causes of such stomatitis, mercury holds by far the chief place. Arlt, of Vienna, observed some years ago that those who suffered from lamellar cataract usually had the history of attacks of convulsions during early periods of infancy, in which cases mercury is frequently given; and Hutchinson believes that it is in connexion with this fact that the dental defects are to be explained. While there is every reason to believe that this condition is the result of the administration of mercury, the evidence seems opposed to the belief that the lenticular cataract is also due to the influence of the drug. Dr. Davidsen, of Zurich, is also author of a paper on this subject.

OBJECTIVE NOISES IN THE EAR.

Dr. Charles Burnett, of Philadelphia, publishes the notes of a rare and curious form of aural affection.* The patient was a young Japanese, aged eighteen, who came under treatment for chronic suppurative inflammation of the left middle ear. He made no complaint of anything else, but while inspecting the *right* ear, Dr. Burnett heard distinctly a noise resembling the snapping of the finger nails emanating from it. It could be heard ten feet off. The membrana tympani was thickened and reddened, and some years before there had been discharge from that ear. When the thickening became less, a slight retraction of the drum-head at its anterior superior quadrant could be detected. The examination of

* Philadelphia Medical Times. Feb. 13, 1875. Page 306.

the fauces revealed an elevation and retraction of the velum palati with each snapping sound in the ear. Deglutition and rapid respiration increased the frequency of the noise; but when the patient held his breath the spasms in the velum and the snapping noise entirely ceased. During ordinary respiration Burnett counted twenty in a minute, but with voluntarily-increased respiration the number of snappings and spasms rose to thirty. During continued speech there were no snappings. The sounds did not occur in regular succession, but two or three in quick succession were followed by a pause. They could be arrested by throwing the head back, or by pushing the velum upwards towards the pharyngeal opening of the right Eustachian tube.

Politzer and Luschka show that the phenomena are really due to spasmodic contraction of the muscles of the velum palati, producing a sudden separation of the anterior from the posterior wall of the pharyngeal portion of the Eustachian tube. This would seem to be corroborated by the fact that this peculiar objective noise is accompanied by spasm of the velum more frequently than by any other symptom. As to treatment, the induction current has effected the only apparent relief and cure.

The reporter has had an opportunity of examining a case of this character under the care of Dr. Charles E. Fitzgerald, Ophthalmic and Aural Surgeon to the Richmond Hospital. The patient is a young woman, and the affection has existed from childhood. There is the same spasm of the velum as in Dr. Burnett's case, and the snapping can be heard at a distance of several feet. Dr. Fitzgerald intends to bring a history of the affection before the Medico-Chirurgical Society of London.

EXCISION OF THE HIP-JOINT.

Dr. Lennox Hodge relates the history of seven cases in which he has performed this operation.*

The age of the patients ranged from four to ten years. The results were—in one case, death on the twelfth day; death in seven months after operation; and in the others recovery, with more or less use of the limb. All these cases were able to walk short distances without a crutch, but with that aid they could move about comfortably. In every instance the acetabulum was diseased, and in one had been perforated by ulceration. In one the rami of the pubes and ischium were involved, and were scraped

* Philadelphia Medical Times. Dec. 19, 1874. P. 177.

and gouged, and in two the femur was dislocated upon the dorsum ilii. In the case of existing abscess, Dr. Hodge observes that if there is no urgency from pain, it would be better to open it during the excision, owing to the likelihood of depression following, but if there is pain the abscess should be evacuated earlier.

As to the age, the author believes that the best period is between the ages of five and ten. Sayre, of New York, has operated 50 times with a death per centage of 25; but Ashhurst's collection of 376 cases shows a mortality of 50 per cent.

Dr. Barton, of Dublin, last year removed the head of the femur for disease, in a boy aged thirteen. The cartilage had disappeared from the acetabulum, and a piece about the size of a sixpence was carious. Three months afterwards he was able to leave his bed. When he left hospital he could put the toes of the affected limb to the ground, but there was still slight discharge from a sinus. His general health was most satisfactory, his appetite good, he was free from pain, and slept well.

SUPRA-CONDYLOID AMPUTATION OF THE THIGH.

Professor William Stokes contributes a second paper^b upon supra-condyloid amputation of the thigh, supplementary to his first, reported in the Transactions of the Medico-Chirurgical Society for 1871. The steps of the operation are there fully detailed, but it may here be briefly stated that it consists in making an oval flap from the front of the joint, the incision passing from condyle to condyle, and extending to a point immediately below the tubercle of the tibia. The patella is raised, and its articular surface removed by the saw. A posterior flap, one-third of the length of the anterior flap, is then made. The condyles of the femur are then removed, at a distance of from one-half to three-quarters of an inch *above the antero-superior margin of the cartilage of incrustation*. The patella is brought into contact with this surface, and fixed there by a carbolised catgut suture, and the flap secured. By this last procedure the patella is kept in its place, until it becomes accustomed, so to say, to its new position.

The supra-condyloid operation, recommended by Professor Stokes, has been frequently performed, and is highly spoken of by

^a Medical Press. Feb. 3, 1875. P. 96.

^b Medical Press. Feb. 10, 1875. P. 114.

Teale, Wheelhouse, and Jessop, of Leeds. The special advantages claimed for the operation are thus enumerated:—

“(1.) The posterior surface of the anterior flap is covered with a natural synovial lining, which I feel confident largely diminishes the chances not only of subsequent exhaustive suppuration, but also of purulent absorption.

“(2.) Any possibility of the split patella shifting from its place on the cut surface of the femur is prevented by the high femoral section, and by stitching the two bones together in the manner I have described.

“(3.) The existence of an osseous curtain, which is formed by the split patella covering the cut surface of the femur, diminishes probably the chances of pyæmia, and is not liable to slough away, as the periosteal curtain recommended by Von Langenbeck undoubtedly is.

“(4.) The vessels are divided at right angles to their continuity, and not obliquely, as they are in other flap operations.

“(5.) The existence of a posterior flap diminishes the chances of any wide gaping of the wound posteriorly, while the anterior flap, being oval, increases the chance of the stump tapering gradually towards its extremity, and assuming the form of a rounded cone.

“(6.) The preservation of the normal attachments of the extensors of the leg.”

ABSCESSSES ORIGINATING IN THE RIGHT ILIAC FOSSA.

This is the title of a paper by Dr. Gurdon Buck, of New York.* Abscesses in this region may be considered under three divisions—those caused by inflammation around the cæcum, those originating underneath the iliac fascia, and those developed in the connective tissue, external to the peritoneum, and between it and the parietes of the abdomen. The author confines himself, however, particularly to the first class, and he collects nine cases, exclusive of his own, in which perforation of the vermiform appendix had occurred. In his case, when the tumour was diagnosed as an abscess, although fluctuation was not perceptible, it was treated as follows:—“A point, two fingers' breadth, distant from, and to the inside of the anterior superior spinous process of the ilium, and a little below its level, where the tumour approached nearest to the surface, was chosen for an opening, which was made with a small canulated trocar (equivalent in size to No. 1 bougie scale). A puncture was first made at

* Transactions of the New York Academy of Medicine for September, 1874.

the point chosen with a tenotomy knife, through the skin, to facilitate the onward passage of the trocar. This was then inserted, and advanced until it encountered the tendon of the external oblique muscle, which presented great resistance to its further passage. To overcome the resistance safely, the trocar was withdrawn within its sheath, and the canula held in firm contact with the surface of the tendon, while the point of the trocar was pushed on. By successive repetitions of this manœuvre the trocar at length encountered no further resistance, and on being withdrawn entirely while the canula was advanced, matter escaped from its outer orifice, and the success of the procedure was demonstrated. The canula being still held *in situ*, served as a guide, along the outer surface of which a sharp-pointed knife was conducted into the cavity of the abscess and used to enlarge the track of the canula. On withdrawing the knife the wound was enlarged to the extent of more than an inch at the surface of the skin. The little finger was then thrust into the cavity of the abscess, and the opening dilated sufficiently to allow a free escape of the matter." On the sixth day a phosphatic concretion, the size of a pea, came away, and on the seventh a portion of compact fecal matter, of the size of a pipe stem, and half an inch long. In another case, that of an old lady aged sixty-five, two worms (*A. lumbricoides*) were discharged.

The important question is as to treatment. Buck agrees with Professor Willard Parker, of New York, that operative interference should be early, and urges that we are not to wait to detect fluctuation. Before that point is reached the patient may die from various causes. Judging from the ten cases here reported, it may be laid down as a rule that after the lapse of one week from the onset of the disease there should be no delay in resorting to the operation, unless there should be clear indication of resolution going on. This treatment, however, is inapplicable in those cases that prove rapidly fatal from general peritonitis.

ELEPHANTIASIS OF THE PENIS FROM STRICTURE OF THE URETHRA.

A man was lately admitted to the Roosevelt Hospital, New York, suffering from elephantiasis of the penis.* The organ was seven inches long and ten inches at its greatest circumference.

* Archives of Dermatology. Vol. I., No. 1. New York: G. P. Putnam.

About the frænum was a bunch of grape-like masses of normal colour. The integument was much thickened, brawny, and immovable upon the penis, and covered a papillomatous formation. At the root were a number of openings, through which urine and pus escaped. No urine passed through the meatus. Twenty-six years after having contracted a gonorrhœa, he had a stricture, which was followed by abscess and fistula through which urine flowed. The growth subsequently appeared. The penis was amputated, when the enlargement was found to be due to an increase of fibrous tissue in the deep layer of the cutis, producing a dense fibrous mass, with—in places—hypertrophy of the papilla.

RECENT CONTRIBUTIONS.

“Antiseptic Osteotomy.” By Professor Volkman. *Edinburgh Med. Journal.* March, 1875.

“Non-cancerous Tumours of the Breast.” By Dr. C. Monod. Translated by C. Cullingworth. *Obstetrical Journal.* 1875.

“Immediate Transfusion.” By Jas. R. Chadwick. *Boston Med. and Surgical Journal.* Jan. 14, 1875.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

Wednesday, May 12th, 1876.

JAMES F. DUNCAN, M.D., President, in the Chair.

The PRESIDENT read a paper, entitled, *Three Cases of Acute Articular Rheumatism, presenting Anomalous Symptoms.* [It will be found at p. 502.]

DR. FOOT observed that possibly the key to what he assumed was the principal anomaly in the interesting cases brought forward by the President, the alkalinity of the urine, was a chemical one, and might depend upon the form in which the compounds of phosphoric acid had existed in the urine. The phosphates existed in the fluids of the body in at least three different conditions. The basic phosphate of soda, for example, possessed three atoms of the base, and had an alkaline re-action. In contact with carbonic acid this salt may lose one atom of the base, forming the carbonate of soda, and what is called the neutral phosphate, which, however, had a feebly alkaline reaction. In contact with uric acid, the neutral phosphate may lose still another atom of base, forming the urate of soda and the acid phosphate, which, according to the most recent commentators, is the form in which it exists in the urine, and the cause of the acidity of it (the urine). He (Dr. Foot) had observed the phenomenon of alkaline urine in rheumatism, and thought he could explain its occurrence by the presence of the neutral phosphate, and trace it to embarrassment of the pulmonary or cutaneous functions. It was necessary to be very particular to test a sample of the total urine of twenty-four hours before determining the question of acidity, and also to observe other obvious precautions about the cleanliness of the vessels employed—which precautions, he was sure, had not been neglected by the President. He congratulated the Society on the example their President had set in communicating so practical and interesting a series of cases.

DR. HENRY KENNEDY said he did not know that any paper which had been read during the session raised more important questions than the present. They were all familiar with the differences of opinion as to treatment that existed in respect to this disease. It was, on the one hand, exceedingly well marked, and could not be mistaken; but on the other hand the treatment was very various. He recollected the time when bleeding was one of the most favourite remedies. He had seen the late Professor Law often bleed for it, and at that time, about a quarter of a century ago, the blood taken was invariably deeply buffed, the cupping was perfect, and the thickening of the fibrous coat very great. As years went on bleeding fell into disuse, but Dr. Law never entirely gave up the practice; and of late years, when he adopted it, limiting the amount taken to eight or ten ounces, to his (Dr. Kennedy's) amazement the fibrinous coat was not to be seen. He thought that fact a remarkable one, and it threw some degree of light on the uncertainty which then attended, and still attends, the treatment of this disease. Some later writers than Russell Reynolds had given some cases where the acid treatment was found useful, but he thought the great point in future would be to investigate the state of the urine as to its alkalinity or acidity. For himself he had been altogether in favour of the alkaline treatment of the disease, but he had met with cases that resisted it, and he had found that the addition of a little wine along with the alkaline treatment, immediately caused the patient to begin to mend. He had seen a good many cases where the spine was affected. Rheumatism was very common in the nape of the neck; he had seen it too in the diaphragm, and he recollected a case where there was actual dysphagia, and he could only come to the conclusion that the œsophagus was affected; the patient, on swallowing, constantly complained when the fluid was going into the stomach of severe pain and stoppage.

There was one point in reference to the acid treatment which would bear out what had fallen from Dr. Foot. The President's treatment was more complicated than would justify them in saying that acids were of much use in these cases. In some of them he had used belladonna and quinine, and therefore the efficacy of the acid alone was not fairly tested. However that might be, the paper was one of much practical importance, and showed that a routine treatment was not to be adopted in these cases. Long ago bark given in powders was the great remedy, and he thought they might fairly come to the conclusion that there are various forms of the disease which ought to be treated by tonics instead of alkalies. The great bulk of the cases, however, he believed, would yield to the alkaline and opium treatment.

DR. STEWART referred to the variety of treatment which prevailed at different times with regard to this disease. He had a perfect recollection

of the treatment adopted by Graves, Stokes, Surgeon Colles, and Sir Dominic Corrigan. The latter used to say that the true remedy for acute cases was opium, and he used to give very large doses of the drug. He (Dr. Stewart) had himself been treated by Mr. Colles for acute sciatica with calomel and opium.

DR. W. G. SMITH wished to make a remark for the purpose of eliciting information. The chief point which the President appeared to have directed attention to was the state of chemical reaction of the urine. Now the urine was only one fluid of many contained in the body, and the President's remarks opened up an important question, not only as to rheumatism, but as to other diseases. Was it fair to take the reaction of any single fluid, whether urine, saliva, or sweat, as an indication of the condition of the patient? They all knew that in health different fluids had different reactions—nay, even fluids taken from various parts of the alimentary tract had different reactions. Again, in a case of rheumatic fever he had ascertained that when the perspiration was extremely acid, not only as tested by the odour, which was a fallacious criterion, but in the usual manner, the saliva and the urine were distinctly alkaline. In that case he could not say whether the alkalinity of the urine was a primary symptom, because the patient was under small doses of alkaline at the time, but, at all events, it showed that different fluids, under the same treatment, had different reactions. He had some suspicion, therefore, independently of other reasons that might be adduced in contra-vention of the theory, whether the notion of the alkaline treatment of rheumatism, which was based on the chemical testing of the urine, was well-founded or not, and it was, therefore, a point in clinical observation worth attending to.

DR. POLLOCK, in reference to the urine being a guide to treatment, mentioned a case that had occurred within the last fortnight. A woman came to him suffering from incontinence of urine, under which she had suffered for some years. He tested the urine with litmus paper, and found it highly acid. He immediately put her on large doses of bicarbonate of potash, and in less than ten days she, who had been disturbed nine or ten times daily, was perfectly free during the day and only disturbed at night. He had found a combination of bromide of potassium, with bicarbonate of potash, efficacious in the treatment of rheumatism. He had used that treatment in the case of a little boy who lived near his dispensary, and was subject to severe attacks of rheumatism. The boy invariably noticed when the bromide of potash was left out, and would say that he had not given him the same medicine that he had got before.

The PRESIDENT, in reply, said it was quite true that he did not institute a series of experiments to determine the efficacy of the acid

treatment. He looked on the patients as subject to his care for restoration to health in the quickest way he could effect that object, and therefore he would not be justified in throwing aside any adjunct which he thought likely to be of use to them, simply from a desire to determine such a question as that. He had no doubt, however, that the acid treatment formed an important adjunct in the recovery of the cases which he had mentioned. Since the paper was written he had met with a case of uncomplicated acute rheumatism, in which he used the acid treatment solely with decided benefit, and while giving every credit to rest in bed and other adjuncts which might be considered the elements of simple treatment, he could not shut his eyes to the fact that where the patient did not get sleep owing to pain, it was desirable to give him something to relieve it. He had given the cases exactly as they were recorded. They showed that he was not a routinist, and that he did not resort to the acid treatment with his eyes closed to the benefit that might be derived from other methods. It was necessity that led him to adopt it in those cases. Dr. Foot was mistaken in thinking that he said that acid urine depended on lactic acid. He merely said that the *materies morbi* of rheumatism was supposed to be due to the presence of free lactic acid in the blood. In these cases there was no pulmonary complication, and the patients were perspiring all through. The cases were short, no doubt, but that depended very much on the treatment—he would not say the acid treatment, but on it combined with other methods. He looked on these patients as being in a condition of the constitution below par. He thought so, because of the absence of redness in the joints—at least, although there was some redness occasionally, it did not exist to the same extent as was usually seen in similar cases, and therefore he thought they required a tonic treatment, and for that reason he gave them sulphate of quinine and belladonna, which was only a modification of Dr. Haygarth's bark treatment. As to the changed condition of the blood referred to by Dr. Kennedy, it was only another proof of the correctness of the opinion he entertained of the change of type in disease of late years. The buffing of the blood formerly showed that there was then a sthenic condition of the system—in other words, a state of hyperinosis, whereas now it was a state of hypinosis with which they had to deal.

DR. J. MAGEE FINNY read a paper on *A Case Illustrating the Benefits of Thoracentesis*. [It will be found at page 510.]

DR. HAYDEN.—The case we have just heard is one of such deep interest to physicians that I cannot forbear the pleasure of testifying to the great interest that attaches to it, and the great benefit, as an illustration of practice, that we may derive from it. I have had

occasionally an opportunity of pursuing the practice which Dr. Finny has outlined in his case. That case is an example, of the most striking character, illustrative of the benefit that may be derived from timely paracentesis. I take it that the great benefit which was derived from the operation in the early part of the case is clearly attributable to the operation itself. The mechanical irritation of the surface of the lung tends not only to originate but to keep up hectic symptoms, and where there is a constitutional tendency to tubercular development, if this irritation goes on, it will end in tubercular deposition. Hence the advantage of early operation. I had a case myself which confirms Dr. Finny's views. It was that of a man of intemperate habits, who came into hospital suffering from acute pleuritis, with rapid effusion. The man's respiratory distress was so urgent as to render it necessary to operate at once. I used the aspirator on three occasions. On the first I removed twenty ounces of serum; on the second fifty ounces of seropus; and on the third occasion fifty-eight ounces, the interval between the three operations being a fortnight and a month respectively. The hectic symptoms disappeared rapidly, the man quickly recovered, and was able to resume his avocation as a labourer. The chest had fallen in considerably on the affected side, but the man had gained flesh, and is, to all intents and purposes, quite well. I have no doubt that in Dr. Finny's case, and in that I have just sketched, death would have been the result of refraining from operation, and I think, in cases of this kind, we should be prepared to perform the operation without delay. In Dr. Finny's case the cavity of the pleura was laid open and air admitted, but that was done only when pus had been formed, and the exclusion of air could no longer be of any use.

DR. HENRY KENNEDY said he had notes of a number of cases which he had treated without the aspirator, but, he might say, by a more determined mode of treatment. He applied large blisters, and brought the system under the influence of mercury, and he never lost a patient yet by that treatment. Of late years the aspirator had been introduced, and it was probable that treatment by that instrument was the best that could be adopted.

DR. SIGERSON said he should like to know from Dr. Finny whether he had examined the expectoration in this case, and, if so, whether there was any albumen present in it at any time during the progress of the disease, for in such a case its existence might be expected from their knowledge of what had occurred in other cases of a similar kind. Dr. Finny's case was a very complicated one. The patient had been suffering under pneumonia previous to getting the effusion, and on one occasion of tapping he complained that he felt as if the aspirator had

touched his lung. Under such circumstances the man should have shown some sign of albuminous expectoration. The presence of such expectoration in cases where thoracentesis had been performed had been noticed in several cases. One of the first was that given by Professor Ball during the time of his attendance at the Charité. M. Terrillon had collected twenty-one cases of the kind in his "Thesis" of 1873. In the great majority of these cases the ordinary trocar had been used, and in only a few the aspirator was the instrument employed. There were also some cases on record in which acute œdema of the lung occurred, and the patient died of it. The first case was under the care of Dr. Dumontpallier at the Hôpital St. Antoine. The ordinary trocar had been used with due precaution, but the patient died. He had been attacked previously by pneumonia, and therefore his lungs were not in a proper state to bear a severe strain. It was found, on *post-mortem* examination, that the lungs were swollen and large, and when cut a considerable quantity of fluid exuded, which was albuminous. In the second case recorded, the aspirator was used by Professor Béhier at the Hôtel Dieu, two years ago, with his usual skill. The patient was a cachectic man, thirty-eight years of age. He was kept in the hospital for two or three days in order to observe his symptoms, and these becoming urgent, thoracentesis was performed on the eighteenth day of the disease. He experienced great relief and a sensation of well-being, but about three hours afterwards Dr. Liouville, chief of the laboratory, was called to his bed-side, and found him in a state of imminent suffocation, gasping for breath, and unable to expectorate. Dr. Liouville tried artificial respiration, but in vain; the patient died in about an hour. This man had been tuberculous, and on *post-mortem* examination it was found that the lung, which had been driven back under the influence of the pleural fluid, had swollen out to an enormous extent, and on being cut a quantity of fluid came out which was albuminous. Two litres and a half had been drawn off by the aspirator from the pleural space, and one litre exuded from the lung when it was cut. Under such circumstances as these, Dr. Béhier had laid it down as a rule that in all cases where there was disease of the lung, tuberculosis, or pneumonia, it would be necessary not to take away all the effusion from the pleural cavity at once, but to draw off the fluid gradually at several distinct times. The physiological cause of the acute œdema was that the air entering the lung afforded a stimulant which caused contraction of the minute vessels. As contraction was followed by paralysis, paralysis of the vessels succeeded, and then followed stasis and exudation. The serum of the blood passed into the air-cells and bronchi of the lung, and the patient, finding it impossible to relieve himself by expectoration, and to breathe, died of acute asphyxia, not of syncope.

DR. GORDON.—There are two or three practical points upon which I wish to make a few remarks. First, as to the time of operating in these cases, I quite agree with Dr. Finny in his observation, that when he was satisfied there was a large quantity of purulent matter in the cavity of the pleura, the sooner it was evacuated the better. The next question is as to the mode of operating. I have performed this operation in a great many cases, and published several of them. My experience is, that for the generality of cases the aspirator is not the best instrument to use; I have used it and also Bowditch's instrument on more than one occasion, but the ordinary trocar or canula is the best instrument to use in cases where you are satisfied you have to deal with an empyema. The last speaker has admirably illustrated one of the evils that arises from the use of the aspirator—when the pleura has been completely evacuated, death has occurred in more than one instance, and within the last week or two some of the London medical periodicals have mentioned a case in which death occurred under such circumstances. There are two different causes of death. One, as the last speaker has observed, a forcible expansion of the lung and effusion into the air-cells and bronchial tubes. Another cause was noticed a great many years ago by the late Mr. Adams, as having occurred in his own experience. In operating on a case of this kind he used all the means that were possible to prevent any air passing into the cavity of the pleura. The entire contents of the pleura were evacuated, and death occurred in a few hours. On a *post-mortem* examination it was found the cause of death was a large escape of blood into the cavity of the pleura, and an unexpanded lung. The source of the blood was anxiously looked for, and, as every one acquainted with the tact and skill of Mr. Adams must know, it did not arise from any circumstance of the operation, but it was found that there was an escape of blood from the surface of the pleura to fill up the vacuum formed by the forcible evacuation of the fluid from a cavity in which the lung was so forcibly compressed as to be incapable of expansion. Another important point raised by Dr. Finny's paper is the time of the introduction of the drainage tube. In a very great majority of these cases the drainage tube becomes necessary for the cure of the patient. There may be some few cases where after one or two operations the wound may be closed and no return of the fluid, but in most of them that is not the case; and in my opinion the drainage tube cannot be inserted too early. In fact it should be used as a curative means, and not as a measure of necessity when the matter becomes foetid. It is best in all cases to give the patient the benefit of the first operation, but if the fluid has been of long standing you cannot evacuate it entirely, and the great probability is that it will re-accumulate. If I have to operate a second time I generally introduce the drainage tube on that occasion. I have done so very often, and have had no reason to regret it. The last

case in which I did so I saw in consultation with Dr. Jennings. A young woman, twenty-four or twenty-five years of age, had a large accumulation of purulent matter in the right pleura; Dr. Jennings used the ordinary hydrocele trocar and canula, and drew off three quarts of purulent matter. In about three weeks she again suffered from dyspnoea, and again purulent matter was drawn off to a considerable amount with the ordinary trocar or canula, and on that occasion I introduced the drainage tube. That was in October or November last, and this very day Dr. Jennings brought her to my house. She has made a very satisfactory progress; she still wears the drainage tube, but she illustrates the great advantage of the early introduction of it in preventing the re-accumulation of pus, and so preventing any hectic symptoms; the side has not fallen in. I examined and carefully measured her chest, and there is only a quarter of an inch of collapse of the right side. The lung is steadily expanding, the drainage tube is low down, and the quantity of purulent matter discharged is very trifling, and diminishing from day to day. I presume that in Dr. Finny's case the drainage tube was introduced through a single opening, and not as if it were a seton. In most cases the former plan is quite sufficient—by a little care it can be readily adjusted and retained.

DR. FOOT thought that Dr. Gordon had hit upon the gist of Dr. Finny's admirable paper. He was very glad to hear Dr. Finny approving of the early removal of the pleural accumulation. With reference to the point Dr. Sigerson had alluded to, the acute œdema of the lung, he had noticed that as a cause of death, and he had preferred Rasmussen's instrument to that of Dieulafoy, because, with the former, the vacuum was merely made by the hand, and the slightest pressure could be felt on the piston, and the operator could stop whenever he pleased. He considered that, whenever putrefaction of the contents of the pleural cavity occurred, either from the entrance of air or the presence of inflammatory products, the sooner a free and permanent opening was made the better; but, where that did not take place, it was better not to introduce a drainage tube. He had a case of chronic empyema, which Mr. Porter kindly tapped for him six times, drawing away a considerable quantity of fluid on each occasion—on the whole 18 pints 3 ozs. The man subsequently returned to hospital, and was again tapped three times. On this occasion he was advised to have a drainage tube introduced, but he (Dr. Foot) felt bound to give him (the patient) his candid opinion, that he had better let it alone, as the man had been tapped nine times, and had survived five years, and had never had any fever. He was advised to go to the country, and did so, and the last time he (Dr. Foot) saw him, he came to ask whether he considered him sufficiently well to go to America, from which he had returned invalided, and he advised him to

go. Had there been any sign of decomposition he should have suggested an opening and the washing out of the cavity with carbolic acid, &c.

DR. FINNY was glad to find the opinion he had expressed confirmed by Dr. Hayden and other speakers. He was not able to say whether the sputum was albuminous or not. The sputum diminished considerably after the tapping, so that it was a symptom hardly noticed in the case. He had not the least doubt the sputum, if it came on afterwards, would have been due to œdema of the lung. He should say, with regard to Dr. Foot's remarks about Rasmussen's instrument, that, although he used an aspirator, a modification of Dieulafoy's, he used it as a suction pump, the suction being the power of his own arm, and not making a vacuum, so that no air could enter. The importance of putting in a drainage tube was very great. Dr. Foot had struck the point when he said the existence of putrefaction indicated when the drainage tube ought to be employed. When putrefaction occurred no time was to be lost, as the development of fœtid gases would only increase the evil. Until that formed they were right in using the aspirator for some time.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-SEVENTH ANNUAL SESSION.

Saturday, 8th May, 1876.

FLKRETWOOD CHURCHILL, M.D., in the Chair.

DR. M'CLINTOCK laid before the meeting the following old obstetrical works, making numerous quotations, and offering some analytical and critical remarks upon each as it came under notice:—

1. "Eucharius Rhodion," *De Partu Hominis*. Frankfort: A.D. 1563.

The first edition of this work was published in High Dutch about 1519; was translated into Latin 1532, and subsequently into German, French, and English. The style of this work is remarkable for conciseness and method. It is illustrated with some very rudely executed woodcuts, and is provided with a very good alphabetical index, all which tended to make the book a justly popular one, as we know it to have been.

2. "The Byrthe of Mankinde, otherwise named The Woman's Booke," set forth in English by Thomas Raynalde, Physitian. London: 1565.

This professes to be a translation of Rhodion's work, but is considerably enlarged. The first edition appeared about the year 1540, and was followed by many other editions; and for nearly one hundred years, according to Denman, it was the popular treatise on midwifery in England. Dr. M'Clintock has in his possession a copy of this work, printed in 1606, but it is word for word the same as that of the year 1565. Both are printed in black letter.

3. "The Expert Midwife." London: 1687.

This, as stated on title-page, is a translation of the treatise of James Rueff, a surgeon of Zurich, *De Conceptu et Generatione Hominis*, the first edition of which appeared in 1554, and at Frankfort in 1587.

It is printed in Roman character, and the name of the translator or editor is not given. It contains some woodcuts, closely resembling, but not quite so rude as those in Rhodion's and Raynalde's works. The most interesting point connected with this work is the description it contains of pudendal hæmatocele occurring at the time of labour, which is (as Velpeau asserts) undoubtedly the earliest recognition of this accident by any obstetrical author that we know of.

4. "The Childbearer's Cabinet."

This very brief little book, written in a popular style, the authorship of which is unknown, was one of four treatises that were published in a work entitled "A Rich Closet of Physical Secrets," published at London in 1653.

It contains nothing but practical directions for the management of pregnancy and child-birth, of a very short and meagre kind, and the only novel point to be found is the recommendation of a binder to the abdomen immediately after delivery.

5. "Chamberlen's Translation of Mauriceau's Treatise on the Diseases of Women with Child and in Child-bed." London: 1672.

This translation, by Dr. Hugh Chamberlen, went through many editions—seven at least—and the copy before the Society is one of the first edition, which is extremely rare; in fact, Dr. Robert Lee never saw one, and has expressed a doubt whether there be such extant. The translator of this work was the same Dr. Chamberlen who is mentioned by Mauriceau, in his twenty-sixth case, as having come to Paris and vainly tried to deliver a woman with distorted pelvis by some secret means.

From this work Dr. M'Clintock passed to the consideration of the discovery of the midwifery forceps, and the respective claims of Dr. Paul and Dr. Peter Chamberlen to be the inventor of this, the most valuable instrument in the whole range of surgery. He assigned various cogent reasons for coinciding in the conclusion which Dr. Aveling has arrived at—viz., that the honour of the discovery belongs to Dr. Peter Chamberlen (the father of Dr. Hugh Chamberlen, who translated Mauriceau), and not to his son, Dr. Paul Chamberlen (as stated by Ramsbotham, Churchill, Leishman, and many other writers of the highest character). Dr. M'Clintock exhibited models of the original Chamberlen forceps, now in the possession of the Royal Medico-Chirurgical Society of London, and also showed a print (belonging to Dr. Churchill), with the legend underneath, "Dr. Paul Chamberlen, 1658," which print, Dr. M'Clintock thought, had probably given rise to the idea that he (Dr. Paul Chamberlen) was the original inventor of the instrument. But, for reasons which have been very fully and plainly stated by Dr. Aveling, he (Dr. M'Clintock) entirely rejected this evidence, and regarded the print as being that of Dr. Peter Chamberlen, the father of Hugh and Paul, and who, in the year 1658 (that on the picture), was fifty-seven years old; and of such age the original of the picture appears to have been. *Apr**opos* to this subject, Dr. M'Clintock exhibited a genealogy (in MS.) of the Chamberlen family, which had been presented to him by Dr. Aveling, who had exercised a great deal of patient research in making out these interesting particulars.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

President—CHARLES D. PURDON, M.A., M.B.

Honorary Secretary—J. J. CHARLES, M.A., M.D.

The Factory Reports of the last two Epidemics of Small-Pox, and the Means which proved Successful in Checking its Ravages. By the President, C. D. PURDON, M.B.

THE epidemic of 1871 came on so unexpectedly that it found us almost unprepared, and from the long interval that had elapsed since the last attack the public had forgotten the necessary precautions to prevent its progress; consequently, when the parties were attacked, vaccination and isolation were not sufficiently attended to, and the disease progressed so rapidly amongst the labouring classes that the Poor Law Commissioners issued a circular to the Poor Law Guardians, requesting them to send a copy to all proprietors of mills and factories, asking them to have all their hands examined, to see if any required vaccination. And, in order to show how necessary this request was, I may state that in those mills in which this recommendation was attended to (I may mention that it was attended to in very few), and where 12,413 hands were employed, 666 were found requiring vaccination; also in those warerooms in which the notice was attended to, and 1,044 hands employed, 136 required vaccination. The medical gentlemen who examined them informed me that numbers presented themselves, saying they had been vaccinated, but, on examining their arms, the cicatrices were found not to be the true ones; and if the inspection had been carried out in the way the Commissioners intended, the results would have been similar to that in the Ligoniel district, which formerly suffered severely. This district has within its boundaries four mills, one print works, one damask manufactory, and two bleach greens, and contains about 5,000 inhabitants. The medical officer vaccinated and re-vaccinated every one that could be induced to allow him to do it; but at the Old Park Print Works the operatives would not submit until the outbreak took place, when they were all vaccinated, and the spread of the disease became checked. During the year preceding he re-vaccinated 495 cases, as well as vaccinated 173 new ones, and the consequence was that in the entire district, except the Old Park Print Works, there were only five cases of small-pox; and you might have drawn a line where his district commenced, and that of the town ended; for on the other side, in a street adjoining, the epidemic

was raging. During this time the dispensary officers were actively engaged in vaccinating all that could be persuaded to allow it, but with little apparent benefit, owing to the operatives coming out of hospital while in the infectious stage of the complaint, and trying to get into their work again, and in some cases too successfully. At this time, when the complaint had caused a complete panic amongst the workers, Mr. Baker—himself a medical man—seeing that the directions issued by the Poor Law Commissioners were unsuccessful in checking the progress of the disease, and knowing that the mills and factories were too often hot-beds of the disease, made such representations to the Secretary of State that he was instructed to call into action the services of the certifying surgeons, in order to check the progress of the epidemic. Accordingly, he drew up the following circular :—

"FACTORY INSPECTORS' OFFICE.

"DEAR SIR,—It appears that many persons employed in factories have never been vaccinated, and that the present spread of small-pox is, in some instances, due to this neglect; the Certifying Surgeons, scattered over the country and possessing considerable influence with the people among whom they reside, have peculiar opportunities, incidental to the discharge of their duties, for ascertaining and remedying this evil.

"The Secretary of State, therefore, directs us to suggest to you, whenever any person, under 16 years of age, applying for a certificate, has not been vaccinated, to represent both to the parents and the employers the danger thus incurred. An employer would be showing only due regard for the interests of his workpeople if he made vaccination a condition of employment: for so indifferent are many people to the risk of infection that they may be found working, even though there may be one among them with the eruption out at the time.

"We shall be glad to hear from you the result of your efforts in this matter.

"We are, Sir, yours truly,

"ALEXANDER REDGRAVE, } *H.M. Inspectors*
"ROBERT BAKER, } *of Factories."*

This circular was signed by the Inspectors, and sent to each certifying surgeon in the kingdom, who at once followed the instructions, not only in examining each applicant, and causing those that required vaccination to be vaccinated, but also prevented those that were infected from entering the mills, &c. The beneficial effects of these measures were very soon apparent, and in a very short time the epidemic began to decline, and soon passed away. These sanitary precautions continued to be used as directed, and each year about 8,000 young persons were examined; and in the interval that elapsed between the two epidemics of 1871 and 1874 upwards of 1,000 young persons were detected who were either unvaccinated or required to be re-vaccinated, on account of being unsuccessfully operated on; and now scarcely a week passes without from two to four persons being detected and required to be re-vaccinated. The consequence is that the disease that has just passed away, in place of being the scourge that it formerly was, only assumed

the character of a slight epidemic. I append the statistics of the two epidemics:—

Number of Persons employed in Mills, Factories, &c., in Belfast, who were attacked with Small-pox in the Epidemics of 1871 and 1874.

1871 Number of Hands Employed in Mills, Factories, &c.	Number attacked with Small-pox in the Epidemic of 1871	1874 Number of Hands Employed in Mills, Factories, &c.	Number attacked with Small-pox in the Epidemic of 1874
In Spinning Mills and Weaving Factories, - 32,521	674	35,799	135 Of these 103 were adults, 32 young per- sons.
In Warerooms, - - 1,774	34	1,508	11 adults.
In Tobacco Factories, - 264	2	222	None.
In Pork Store (Cutters), - 245	None	178	None.
In Felt Works,* - - 150	None	167	None.
Total, - - 44,818	837	45,550	176, of whom 137 were adults, and 39 young persons.

A Case of Hydramnios, with an Anencephalous Fetus. By PROFESSOR DILL, M.D.

MRS. K., aged twenty-two, came first under my care in the early part of the year 1874, for simple ulceration of the os uteri, and having received the necessary treatment, she soon recovered.

I discovered from herself that shortly before this she had had a premature confinement, the details of which I am unable to state. I may say, however, she is of opinion that the womb owed its recent condition to the manner in which the fœtus on that occasion was removed.

On the 15th of January, 1875, Mrs. K. again called upon me, to secure my attendance at her confinement, which she expected would take place on or about the 10th of April, and she appeared to be in good health and spirits. On the 23rd of February I was requested to visit her, which I did at 11 o'clock a.m. I found that labour had set in, that she had been complaining through the most of the night and all that morning, and that labour was now pretty well advanced.

I ascertained, on making the necessary inquiry and examination, that she had reached the thirty-second or thirty-third week of utero-gestation; that the abdomen had latterly increased in size very rapidly: that it was

* The numbers attacked in other employments need not be given here.

globular in form, and prominent at a point immediately below the umbilicus; that there was great tenseness of the abdominal parietes, and that the surface did not present the usual irregularities which are recognised in the normal condition of pregnancy. The foetal movements were believed to be absent, but, if present, they were so very feeble as scarcely to be felt, and this condition had existed a fortnight. Mrs. K. had suffered considerably from pain over the abdomen, especially in the left side, between the false ribs and the crest of the ilium. There was œdema of the lower extremities, and the labia were very large and painfully distended. On examining the vagina, the lower segment of the uterus was found to be more than usually distended; the os was dilated; the membranes were so tense, strong, and full, as not only to present an obstacle to their descent, but also to render it impossible to discover the presenting parts within. Under these circumstances there could be no difficulty in arriving at the diagnosis that we had at least a well-marked case of hydramnios, and this opinion having been formed, there was as little difficulty in determining the appropriate treatment—namely, puncturing the membranes. This having been done, although vessels supposed to have been sufficiently large were brought into requisition, the quantity of liquor amnii was so great, that after filling the vessels to the amount of over two gallons, I believe fully an equal quantity of the waters escaped over the bed and the floor. The lady was soon heard to express her alarm at the sudden and marked decrease in her size; at the same time she stated she had obtained great relief. The abdomen and uterus were promptly grasped by the nurse, whilst I, in making a vaginal examination, discovered a small foetus lying across the mouth of the womb; the lower extremities were easily seized hold of, brought down, and the foetus extracted in a short time. The placenta followed in a few minutes. The child (a female) was happily still-born, as there were deficiencies of certain parts. It appeared to have arrived at the seventh month. The case altogether presented some features of importance. The foetus was an interesting variety of monstrosity, being anencephalous. In this case there was not the total want of the bones at the upper part of the cranium, but the skull ran backwards so abruptly as to leave no forehead, and little space for the encephalon.

There was also existing a spina-bifida, extending from the nape of the neck to the upper lumbar vertebræ. The membrane over it had evidently given way in utero, and the fluid had poured into the amnion. The foetus bore another mark of deformity—namely, talipes varus of the right foot, which is often found to co-exist with evident derangement of the nervous centres, as in acephalous, hemicephalous, and spina-bifida subjects.

Such cases are, fortunately, comparatively rare. In a large and lengthened midwifery practice I have only met with three anencephalous

monsters, and the liquor amnii was found to be in excess in all. Many explanations have been offered to account for the anencephalous fœtus, but I think such cases go far to confirm what Professor Rudolphi believed to be the true origin, or cause—namely, embryonic hydrocephalus. He has described an embryo, on the upper part of whose head was a vesicle ready to burst; a second, in whom the envelopes of the brain had burst, the pieces floating round the base of the skull; and a third, in whom these floating remnants were partly gone, thus verging on the common acephalous, as we find when born at the full period of gestation.

This opens up another subject for interesting inquiry—namely, the origin of the excessive quantity of the liquor amnii which accompanies the anencephalous fœtus, and which may also accompany spina-bifida.

I am of opinion that the excessive quantity of liquor amnii will not be found to exist unless the sac containing the fluid either in the head or spine bursts and pours its contents into the amnion. All the cases and preparations bearing on this point which have come under my notice would accord with this theory.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Intra-ocular Cholesteric Cyst.—MR. WILSON said: About a week ago a girl, aged four and a half, was brought to me from the country on account of an affection of the right eye. On her coming into the room there was at once apparent a peculiar brilliant yellowish reflection from this eye, similar to that seen in cases of glioma of the retina. All the history I could get was that when the child was two years old she had an internal strabismus. Six weeks ago, at the breakfast-table, the father noticed an extraordinary golden appearance of the eye—in fact, to use his own expression, an emptiness of the eye, as if there were no pupil. On examination I discovered a brilliant yellowish reflection from the interior of the eye, resembling what we used to know in former times as fungus hæmatodes. There appeared to be a tumour pressing from behind forwards, and pushing the retina forwards as far as the back of the lens. The optic nerve was not visible, as the tumour had apparently encroached on it. The mass was divided by three depressions, and three or four retinal vessels were plainly visible. The retina seemed healthy, so far as its nerve-fibre layer was concerned. The rest of the eye was normal. There was no vision, and the intra-ocular tension was increased. My conclusion was that there was a tumour in the bottom of the eye, and the next question was whether it was a tumour of the choroid or of the retina—whether it was of the class called glioma or of the ordinary sarcomatous character. It was evidently not a pigmented choroidal sarcoma, but it might be a non-pigmented tumour. These tumours are, however, rather rare; and, taking into account the age of the patient and this brilliant yellowish reflection, I came to the conclusion that it was a sarcoma of the retina named glioma, and that it implicated the outer layers of the retina, and increased externally towards the sclerotic side, leaving the nerve-fibre layer and vessels free. On removing the eyeball and holding it up in the sun's rays, something struck me that there was cholesterine in the eye. To-day the eye was opened, and it was found that between the choroid and the retina there was a large accumulation of fluid, completely filled with cholesterine crystals, and this it was that caused the peculiar yellowish reflection.

The tension of the eyeball was increased, and its hardness was one of the features that led me to believe it was a tumour. We know that cholesterine does occur, but it is generally in the chambers of the eye. In this case the retina was completely detached throughout its whole extent, and represented by a cord-like extension from the optic nerve behind to the ora serrata in front. We could not detect any motion in this fluid during life. I think this is an exceedingly important specimen for diagnostic purposes. I see no reason to alter my opinion of the case in a surgical point of view, but I do see reason to alter my diagnosis. It is an error many may fall into. We have frequently seen blindness occur in cases of cerebro-spinal meningitis during the epidemic of that disease, and there it was attributable to suppurative or plastic choroiditis. There we had an appearance somewhat similar to that seen in glioma, but then we had the history which led to it, and also the ophthalmoscopic appearances to enable us to form an opinion. Here we have no history of brain fever. The child was healthy; there was never any irritability of the eyeball; the child had measles and scarlatina, but no other serious illness, and this affection came on just as a malignant disease of the eyeball comes on, and at the usual age. The only thing that was peculiar was the healthy condition of the vessels, but in glioma we also have vessels ramifying on the surface of the tumour, and that is one of the differences between it and sarcoma. There have been cases of lymph exudation at the back of the lens as well as in the fundus, which have been mistaken for malignant disease, but I do not know of any instance similar to the one now exhibited.—*January 23, 1875.*

Rupture of the Liver.—MR. JOHN HAMILTON said:—A child was admitted to the Richmond Hospital on the 16th instant. Ten minutes before admission a wall had fallen on the child and crushed him. He was in a moribund state; the face pale, the surface of the body cold, no radial pulse to be felt, and the action of the heart extremely feeble. The only word he uttered was "Mamma," and he died fifteen minutes after admission and twenty-five minutes after the accident. On the chin there was a deep cut, and there were severe scrapes about the legs. There was no abrasion or bruise, or any sign of injury to the trunk, chest, or abdomen. In forty-eight hours after death the body was examined. When the abdomen was opened no lesions were discovered, except in the liver, and those lesions, as you will see, were of a very extensive character. Here is the posterior surface of the liver, and you will see that the Spigelian lobe is nearly entirely torn away from the body of the organ; that the whole of the surface is bruised and torn; that in the lobulus quadratus there is a deep rent; that there is on the posterior surface, and near the edge of the right lobe of the liver,

an extensive abrasion and a tear going to a certain depth; but the most remarkable of all the injuries is that this great rent, going obliquely through the right lobe, has nearly separated the liver into two parts. You perceive how deep it goes into the surface of the liver, nearly to the gall bladder. The convex surface of the liver is comparatively free from lesion. There is an extravasation of blood, but little else. Mr. Stack, our resident surgeon, when making the *post-mortem* examination, observed that this extensive tear was exactly opposite the prominent part of the spine, and therefore he came to the conclusion that the soft walls of the belly had yielded before the weight and force of the falling wall, and the resistance of the spine on one side and the weight on the other had torn the liver that was between them. I have no doubt this was the case. Some years ago I exhibited a lesion of the liver in a sweep. He fell down a chimney, and his right side came in contact with a projecting part. He was admitted with a pain in the side. He lingered two days and died. He had also suppression of urine. It was hard to make out what the injury was, for there was great pain in the belly and suppression of urine, and it was supposed the kidney had suffered, but when the belly was opened the liver alone was found to have suffered from the violence. It was torn extensively, just as this is, and, just as in this case, there was not the slightest sign of abrasion or bruise on the abdominal wall. There is a sort of analogy to these cases in some injuries of the head. A policeman was admitted to hospital with a deep cut in the occiput; it went through the scalp to the bone. He had his helmet on, which is made of a light but tough substance—felt. Where he was struck with the stone the yielding portion of the helmet was not cut, whereas the resisting bone on the one side, and the stone on the other, caused the laceration of the scalp. In both these cases of the liver there was another important fact—the extensive hæmorrhage. In the child the hæmorrhage amounted to twenty-six ounces in the cavity of the belly. In the sweep's case it was also large. The shock and the great injury killed the child quickly. The sweep survived two days and a half, but I have no doubt that the extensive hæmorrhage hastened his death.—*January 23, 1875.*

Cystic Disease of the Ovary ; Ovariectomy.—MR. H. GRAY CROLY said: This is a specimen of an ovarian cyst which I removed this morning. I shall read an extract from the notes taken by Dr. Hearn:—The woman is aged fifty, is unmarried, and enjoyed good health till seven months before her admission to the City of Dublin Hospital, on the 3rd of November last. She stated that her general health was good, and that seven months before her admission she noticed, for the first time, a dragging pain in the left side, accompanied by a swelling which gradually

increased up to the time she applied to be admitted into hospital. When admitted the tumour presented the usual appearances of ovarian disease, and had the usual characteristics on percussion and other examination. She was examined by Drs. Kidd and Atthill, and also seen by Drs. Churchill and Denham. They pronounced the uterus to be perfectly sound, but at the time of admission there was a small polypus which was easily removed by Dr. Atthill. The following were the measurements of the abdomen, viz.:—At umbilicus, 35 inches; from umbilicus to ensiform, 6 inches; from umbilicus to pubis, 8 inches; from ensiform to pubis, 14 inches; from right anterior superior spinous process to umbilicus, 9 inches; from left anterior superior spinous process to umbilicus, 9 inches.

Though it was decided, on consultation, to be a suitable case for ovariectomy, yet, in consequence of her health not being good, I decided on keeping her under observation, and measurements were made from time to time. Finding that the tumour was increasing in size, and that her discomfort was becoming greater every day, I decided, as soon as her health admitted of it, to perform the operation. An examination of her heart, kidneys, and lungs, by my colleagues and myself, tended to prove that there was no other disease existing. Accordingly this morning I performed the operation. The cyst was full of fluid, which I removed before taking out the cyst (it contained a bucketful of fluid). It presents the appearance of an unilocular cyst, but at the lower part there is a second cyst of small size. Nothing occurred in the course of the operation worth mentioning. It was not necessary to introduce my hand into the cavity of the abdomen. On opening the peritoneum I got Sir Henry Thompson's sound, passed it round, and found no adhesion, except on the right side, where that characteristic sound existed. The cyst was then turned out without difficulty, and the pedicle secured by the clamp.—*January 30, 1875.*

Aortic Patency ; Infarction of the Lungs.—DR. GERALD F. YEO showed the heart and lungs of a labourer, aged forty-one years, who had died the day before. He was admitted into the Whitworth Hospital on the 5th of January, suffering from intense dyspnoea and occasional vertigo, which he stated had come on suddenly. He had had repeated attacks of rheumatic fever, and for many years had been affected each winter with a cough. He had a severe cough when admitted, which gave him great distress. His lower extremities and loins were œdematous. His pulse was extremely weak; the chest was resonant both anteriorly and posteriorly. Area of precordial dulness was slightly diminished. Loud sonoro-sibilant râles were heard all over the chest, accompanying the

impeded respiration. The heart's impulse was weak, and the sounds laboured and indistinct. A definite, double, basic bruit seemed to complete the group of signs upon which the following diagnosis was founded—chronic bronchitis, aortic insufficiency, fatty heart. No improvement followed the most active treatment. The anasarca increased; the dyspnœa and cough were slightly relieved; the heart's action became weaker, its impulse could no longer be felt; pulse weak and compressible.

He remained in this condition for three weeks, at the end of which time he suddenly became much more distressed, and was attacked with profuse hæmorrhage from the lungs. His sputa remained tinged with blood ever after the first bleeding, and he had three severe subsequent attacks of hæmorrhage before his death, which occurred on the third day after the first hæmoptysis. The day before his death his nose became quite cold and blue, and being quite insensible it was looked upon as gangrenous.

The *post-mortem* examination showed that the heart was enormously hypertrophied, and all the cavities dilated. The wall of the left ventricle was about twice its normal thickness; the wall of the right ventricle also very much increased in strength. The right auricular appendix was tightly plugged by adherent grey clots, the surface of which was elastic and dark, but the centre easily broken down into a friable mass, which in one part was almost semi-fluid. The aortic valves were dense, rough, and irregular; the posterior fold quite reduced to a rugged ridge. The muscular tissue of the enormous ventricle did *not* show any very marked microscopic characters of fatty degeneration. An unusually stout band, formed throughout of muscular tissue, crossed from the septum to the opposite wall of the left ventricle, and held the two sides of the cavity together when it was opened, which was done by splitting it from the apex along the septum. The lungs were throughout very emphysematous, but more especially anteriorly, the inferior margins of the upper left and middle right lobes were blown out into irregular, nodular, pale masses, which protruded when the chest was opened, and when these blebs were held *in situ* they were found to overlap the large heart in such a manner as almost completely to hide the pericardium from view. On the inferior and posterior margin of the right lung was found a dense, black, airless mass, which included a wedge of the lung about two inches in diameter; on section the surface was found to be almost dry, and required considerable pressure to squeeze out some dark airless fluid. This mass was accurately defined from the lung tissue in its immediate neighbourhood, which was, however, intensely congested. A smaller spot of similar induration was found on the anterior margin of the same lobe, while two others were seen in the left lung. The vessels leading to these localised centres of induration were found tightly plugged with dense clots, the thickest end of which was usually adherent to the coat of vessel. The

bronchi were filled throughout with frothy mucous, stained with blood; the mucous membrane was here and there thickened and discoloured.

Dr. Yeo considered the case interesting from several points of view. First, as showing good examples of the form of disease called pulmonary apoplexy, or hæmorrhagic infarction of the lung, and both its history and anatomy seem to support the view that the immediate cause of this form of circumscribed engorgement is the plugging of a vessel with an embolus. The source of such an embolus was here found in the right auricular appendix. The arteries leading to each solid spot were undoubtedly plugged, and the pulmonary hæmorrhage had been *preceded* by sudden increase of pulmonary distress. The ages of these infarctions may also be studied, as their origin, no doubt, dates from the various attacks of bleeding.

Secondly, the case shows well how an immense heart may be covered up by emphysema of the neighbouring parts of the lung, so as not only to hide the dulness which one might reasonably expect to find when such an organ is present, but absolutely to reduce the usual precordial dulness.

Thirdly, it is interesting that such an enormous ventricle, with a perfectly incompetent aortic valve, produced a radial pulse, the beat of which was so feeble as to be sometimes difficult to feel, for during the entire time the man was in hospital the pulse was so weak that considerable fatty degeneration of the heart-muscle was, with the greatest confidence, prognosticated. As the microscope did not bear out this view, it was necessary to seek some other explanation of the clinical signs, and the one which experience in other cases led Dr. Yeo to adopt was, that the circumstances which had caused the sudden attack of bronchitis, for which he had been admitted into hospital, had caused distension of the cavities of the heart to such an unusual degree that their power of contraction was interfered with, which condition of atony was kept up by the various other circumstances which aided in causing his death.—*January 30, 1875.*

Excision of the Knee-joint.—DR. HAYES said: I have the honour to exhibit to the Society a knee-joint which I excised on this day week. The history of the case is as follows:—The patient, a girl of eighteen, some eight years ago was thrown from a car on to the road, falling on her left knee; she was rendered insensible. When questioned she said her head did not come into contact with the road; it was owing to the excessive pain that she became insensible. She was carried home, and when she recovered consciousness sickness of the stomach occurred—she vomited. The knee became swollen and painful; this continued for a month, when the pain became much aggravated and prevented her walking. She now consulted a doctor, who said the knee had been

dislocated. He moved it about, then said he had reduced it, and told her to keep quiet and not to walk. A few days afterwards she gave the knee a knock, but took no notice of it for a week, when she again consulted the doctor, who said the dislocation had recurred, but he failed in the second attempt to reduce it. She came to Dublin in last July, and was admitted to the Mater Misericordiæ Hospital, under the care of Dr. Cruise. He did everything to relieve the pain, and bring the limb into a proper position; it was then semi-flexed. He blistered the knee, applied belladonna, and supported it by plaster of Paris splints, keeping the knee at rest. There was no history of struma in the family. The girl was attacked with erysipelas, and Dr. Cruise advised her to go to the country for some time and recruit her health. She was re-admitted to hospital last September. The joint was then somewhat globular in shape, felt soft and pulpy, and pressure over the condyles of the femur and the tuberosities of the tibia gave rise to extreme pain. The nocturnal startings of the limb were constant and troublesome, and the circumference of the joint was $1\frac{1}{4}$ inches more than that of the healthy knee. Dr. Cruise asked me to take the patient under my care, with a view to the removal of the joint; and on this day week I excised it. Here we have the articulation which, at first view, seems to present very little disease. The cartilages on the surfaces of the head of the tibia seem to be normal. The cartilages on the condyles of the femur seem, to a large extent, to be in pretty much the same condition. We have, however, on the outer condyle of the femur, a point of ulceration, and erosion of the cartilage, and there is evidently a stratum of enlarged vessels beneath a considerable patch of cartilage. The surface of the patella is also in an abnormal condition. The inner facet is covered with fibres, and we have here on the outer facet an erosion corresponding to that upon the femur, a sesamoid bone in a mass of soft tissue is seen lying below the facets. The condition of the synovial membrane is extremely thick and pulpy, its condition being similar to that described by Sir Benjamin Brodie under the name of "Pulpy Degeneration." The patient's sufferings before operation were most acute; she could hardly bear the slightest examination of the joint. Once the bed-clothes were removed, and the knee exposed, she shivered with dread lest the limb should be handled or moved, and when it was necessary to change the bed-clothes she screamed with pain.—*January 80, 1875.*

Excision of the Knee-joint.—DR. HAYES said: I have to exhibit a knee-joint which I removed from a patient in the Mater Misericordiæ Hospital on last Wednesday. The patient was a girl aged eighteen; four years ago she fell, when at school, her left knee striking on a hot water pipe, and at once she fainted from excessive pain. Six days afterwards she was able

to walk about, but still the pain in the knee continued. On the 2nd November she was admitted to the Mater Misericordiæ Hospital suffering from nocturnal startings of the limb. Symptoms of hectic set in, and her sufferings became very severe. She repeatedly expressed a wish that something should be done in the way of operation to relieve her. She was admitted under the care of Mr. Tyrrell, who extended the limb, applied the weight and pulley, and did all in his power to get the limb into a proper position, but the extension of the limb caused extreme pain, and it had to be put on a M'Intyre's splint in the semi-flexed position; ultimately it was decided to excise the joint, and here we see a condition of parts which presents a strong contrast to the case which I previously exhibited. On the upper surface of the tibia the cartilage has entirely disappeared from the internal facet, and on the external facet the only remaining part of it is ulcerated, and there is slight extension of this ulceration into the subjacent bone.

The patella likewise presents a much altered appearance, with destruction of the articular surface, the facet being completely covered with fibrous tissue. The synovial membrane has undergone degeneration, and the joint is, in fact, entirely disorganised, yet there was not the smallest trace of pus, or evidence of tendency to suppuration within the articulation.—*January 30, 1875.*

Fracture of the Skull.—DR. BENNETT said: This specimen is taken from the body of a man who died during the past summer in Sir Patrick Dun's Hospital. He was sixty-seven years of age. He was admitted on the 28th September, 1874, suffering from a lacerated wound of the scalp in the left parietal region. He had been labouring in a neighbouring factory, repairing a roof; he and another man were engaged raising materials to a height of 34 feet through a trap-door on the second floor by means of a windlass; the second floor was 9 feet from the ground. The gear of the windlass got fouled, and in attempting to right it the patient's fellow-workman jerked the "gin" off the place on which it was fixed. It fell from a height of 34 feet, striking against the edge of the trap-door in its descent, and striking the man, who was standing erect beneath the trap-door, on the left side of the head, immediately knocked him senseless. In this condition he was at once brought to the hospital. The gin of the windlass consisted of a short thick piece of timber, having attached to it an iron block and pullies. The whole thing weighed 80 lbs. I am particular in this matter because we can calculate, if necessary, exactly the force of the blow which struck the man's head. He was quite unconscious when admitted, breathing stertorously, with dilated and motionless pupils. A large lacerated wound over the temple marked the point where he was struck. He was evidently dying when I saw.

him shortly after admission. The scalp was lacerated to a great extent, and it was easy by the eye alone to detect a depressed fracture of the left parietal bone. The brain substance escaped through the wound, which had ceased to bleed at the time of the man's admission to hospital. About half an hour after admission he had a convulsion, described as being of extreme violence, and he died within an hour after admission. On seeing the body next morning in the dead-house, a feature of the injury worth recording was noticed at once. On the floor of the dead-house there was a great pool of blood, which had evidently flowed from the wound in the skull as it lay on the table rather low. There had been, as I have stated, no hæmorrhage when I first saw the patient, nor had there been any, further than a few drops, in his transit to the hospital. This free *post-mortem* hæmorrhage at once suggested a fracture of the base of the skull involving one of the large sinuses. The specimen presents—1st. A well marked, ordinary depressed fracture of the left parietal, the bone being depressed for about the area of a crown piece, the depressed portion being broken into several fragments; the membranes are stripped, to a great extent, from the bone around the depression, and two or three rents are seen in them through which the brain matter escaped. From the lower angle of the depression there is carried down a fissure which splits the anterior inferior angle of the parietal, and travels down directly to the base of the skull, and dividing the greater wing of the sphenoid enters the lacerated orbital foramen, across this opening the fracture is traceable through the optic foramen, and across the anterior part of the sphenoid body to the right optic foramen.

Thus far the injuries of the base are instances of fracture of the base by radiation from a fracture of the vertex. The next point in this specimen is an extremely interesting one. The man was standing up when the beam fell on his head. The *post-mortem* hæmorrhage from the base of the skull pointed to a wound clearly of some of the large sinuses; and on directing my attention to discover its exact seat, I had no difficulty in finding a wound of the lateral sinus on the left side. The base of the skull is fractured over each occipital condyle; the fracture runs directly outwards for a short distance in each case, but does not pass beyond the masto-occipital suture. That on the right side presents a slight upward displacement of the bone. A greater degree of thrust upwards has taken place on the left side, and the fractured portion of the occipital bone projects one-fourth of an inch into the cavity of the cranium, the jugular fossa being displaced upwards; we trace forward from each of these fractures of condyloid portion of the occipital through the posterior lacerated foramina fractures of the base passing along the inferior petrosal grooves, to meet the first fracture in the foramina optica. The left masto-occipital suture is opened for a considerable distance. The

next fracture to be noticed is this—an oblique fracture passing through the asilar process of occipital from the right petrosal groove towards the foramen magnum, but without reaching its border. On turning to the base of the skull we find the tip of the transverse process of the first vertebra is broken off. The spine, it will be seen, is retained by its natural ligaments, and viewing it with the skull it is evident that the latter has been driven down upon the column—that the spine is impacted into the occipital bone, the impaction being greatest on the left side, the side on which the weight fell. It is evident from the position of the bones that the cause of the fracture of the transverse process of the first vertebra was its forced contact with the jugular eminence of the occipital bone, for the root of the process remains buried in the fossa internal to this bony projection, and it is impossible to apply the detached extremity to the remainder from want of room.

The head in this case was driven forcibly down on the spine, and the occipital condyles yielding, the spine was pressed up with the skull, and the spine itself remains impacted into the cavity of the cranium. This fracture repeats, in many of its essential particulars, one I showed last year, where the injury was caused by a heavy man of 16 stone weight suddenly falling off a car on his vertex. There the fracture was caused by the weight of the body falling on the cranium; here it was caused by the “gin” striking downwards. This skull is one of the thinnest I have ever seen, and one would have supposed that a great weight falling with violence on it would rather have smashed to pieces the upper surface than transmitted the force downwards towards the articulation with the spine.

Lastly, we have to notice a very peculiar fracture of the base unconnected with any of these which I have described. The posterior clinoid processes, with the intervening piece of bone, forming the posterior boundary of the sella turcica, the cantle of the saddle, in fact, has been detached from the body of the sphenoid bone. In the recent state the clinoids retained their connexions with the tentorium cerebelli. This fracture appears to have resulted from the violent strain of the tentorium which must have existed at the moment of occurrence of the injury. M. Aran records the occurrence of this fracture in several of his experiments made to determine the influence of the impact of the weight of the body on the occipital condyles in producing direct fractures of the base of skull. This specimen, in all its details, entirely bears out the conclusions of M. Aran, and presents most remarkable examples of the different varieties of fracture of the skull as classified by him.—*January 30, 1875.*

Ulcer of the Stomach.—DR. FINNY said: The morbid specimens which I now exhibit are the stomach and intestines of a man who died on

Tuesday morning in the City of Dublin Hospital. The disease from which he suffered was ulcer of the stomach, and it presents some points of interest. The man was a pensioner, aged forty-seven, had served twenty-five years in the army, and was a man of great muscular development. He was able, up to Saturday last, to continue his occupation in driving about a bath chair in the suburbs adjacent to the City of Dublin Hospital. On Saturday last he dined heartily of what was not a usual meal with him—bacon and cabbage. About three o'clock on the following morning he felt pain in the stomach, which was unaffected by palliatives. Constipation being well marked, and vomiting setting in, an injection was given, and repeated in the evening, but without effect. On Sunday evening the urine was drawn off in small quantity; he passed none voluntarily. He was brought in a cab to the door of the hospital on Monday morning, walked in with the aid of two men, and with the aid of a porter was able to walk up stairs to his bed. His aspect was that of a man suffering greatly. The colour of the face was blue, and he looked as if he was approaching, if not actually in, collapse. The hands and feet were cold; he was incessantly in motion, moving from one side to the other, and he referred all the pain to the hypogastrium. Pulse 130. After he came in an injection of water was given him, which brought away some fæces, and gave him relief. Noticing his extreme distress, I thought there was some perforation of the intestinal canal, but I was not prepared to find it in the stomach, as he invariably referred his pain to the hypogastric region. Over this there was dulness, and a tolerable amount of pressure could be endured without wincing, and he lay in bed on his back, with the legs extended. Leeches were applied to the hypogastrium, and opium was given, with some stimulants. The vomiting which he had before admission ceased, but up to eleven o'clock that night he passed no water, and I then drew off a drachm of water with the catheter. Pulse very small, 140. He was quite rational, and gave a clear account of his history and symptoms, but was very restless, frequently getting up, and the opium had no effect in calming him. At five o'clock, a.m., he died quietly. The autopsy was made nine hours after. The abdomen was greatly distended with gas, as, on puncturing the abdominal parietes, the gas escaped with a loud whistle. A large amount of semi-feculent matter was seen, of a yellowish colour, and the whole intestinal tract was glued together by adhesions, the lymph being a quarter of an inch thick, and under the lymph the intestines were of the brightest vermilion colour. On raising the liver we see the cause of the mischief. You see a small round hole at the pylorus, where the duodenum extends from it exactly inside the sphincter, on the anterior aspect of the stomach. Through this the escape of the food had gradually taken place, and by its gravitation and presence had caused so extensive an inflammation above and in the pelvis. On

turning to the back of the stomach we find a cicatrix near the pylorus, along the lesser curvature of the stomach. On laying open the stomach we find evidence of two diseases. The one which caused death was the characteristic ulcer of the stomach; it has that punched-out appearance in the wall of the stomach, and in the centre of it is a small hole; but at the upper part of the stomach there is evidence of a similar ulcer, which had evidently been some time ago eating its way through when cicatrisation occurred. We find the peritoneal surface thickened in this spot and puckered into a cicatrix. The case is interesting from these two points. First, the great extent of ulceration which caused the perforation, without any symptoms of that disease, because, on questioning the man, he said he never suffered any unusual symptoms referable to the stomach—he never had melæna, he never had vomiting, and his wife was unable to say that she knew of his complaining. The other point is the amount of peritonitis that existed without some of the usual symptoms of peritonitis, the tenderness being very slight, and the patient being able to lie with his legs extended. The breathing was not thoracic; he was able to draw his breath deeply. The case also affords a confirmation of the fact laid down by writers on the stomach, of the tendency of an ulcer on the anterior wall of the stomach to fatal perforation, while on the posterior wall of the stomach it is so often occluded by adherence to the pancreas and cicatrisation.—*February 6, 1875.*

Disease of the Aortic Valves.—DR. HAYDEN said: I have the honour of submitting a good example of double lesion of the aortic valves. The physical signs which existed in connexion with this case are of some diagnostic value, and that must be my excuse for exhibiting a morbid specimen of such an ordinary character. The history of the case is shortly as follows:—A man, aged fifty-three, of intemperate habits, was admitted, about three months ago, under the care of my colleague, Dr. Nixon, who was kind enough to let me have an opportunity of examining him. The physical evidences of a double lesion of the aortic valves were then well pronounced, but there was nothing remarkable beyond these. He was re-admitted under my care on the 29th of January. His condition was then as follows:—There was slight œdema of the lower extremities and a remarkable condition of the features; it could not be described as cyanosis, but rather, if I may be permitted to coin a word, as *erythrosis*. There was a pinkish tint of the face. This condition varied very much with the paroxysms of difficulty of breathing. When in a recumbent position he was subject to attacks of this, but the breathing differed from the Cheyne-Stokes respiration in the absence of the regular rhythm of ascent and descent. He exhibited rather abruptly symptoms of great respiratory distress; he struggled for breath, moaned,

and begged to be lifted up, and his face became intensely red. At mid-sternum there was a very loud systolic murmur, followed by a post-diastolic murmur; the latter followed the second sound rather than accompanied it, and was of a blowing character. The first murmur was distinctly transmitted into the neck, whereas the diastolic murmur ceased at the sterno-clavicular articulation. The former was faintly audible at the apex of the heart, but the latter was loud in that situation; whereas at the ensiform cartilage it was very faint. The visible pulsation of the superficial arteries was well pronounced likewise. The poor man received some benefit from leeching and other palliative measures, but he died of congestion of the lungs and effusion into the right pleura on the 5th instant. The precordial dulness had been much extended; I was, therefore, quite prepared to find the heart of great magnitude. There was very considerable effusion into the right pleural cavity, and there was congestion of the right lung, particularly at the base. There was also effusion into the pericardium. The heart weighed thirty-three ounces. The right auricle and right ventricle were filled with dark clotted blood, and extending into the pulmonary artery I found a thrombus. This, however, seems to have commenced in the sinus portion of the right ventricle, for the remainder of the chamber contained only dark-coloured blood. The right ventricle is not increased in thickness or capacity. The left ventricle is thickened and dilated, but at the apex it is rather thin. The mitral valves are competent. The aortic valves are in a remarkable state of disease. Looking into the aorta from the ventricle you will see one of the valves standing out into the aorta in a remarkable manner. It is folded, with its convexity towards the ventricle. This is the posterior of the aortic valves, and examining it from the posterior aspect you see three large calcareous masses projecting from it. They are so placed as to compensate in some measure for the defects of the valves, and they modified the rhythm of the murmur by postponing the occurrence of the reflux. The aorta is very large. There are two features in this case to which I beg to direct attention in a diagnostic respect. First, in this case there was the Cheyne-Stokes respiration, not very well pronounced, and this existed in the absence of fatty disease of the heart. Here is a heart perfectly sound. It existed in the absence of calcareous degeneration of the coronary arteries, for these vessels are likewise sound, and in the absence of atheroma of the aorta. These three conditions are commonly assigned as causes of this kind of dyspnoea. I have long held the view that it is due to atheromatous change and dilatation of the aorta. That this is the morbid condition most commonly found in association with this phenomenon I have no doubt. Dilatation of the aorta exists here in a high degree. I have frequently found this peculiar breathing where there was no fatty disease, no calcareous change of the coronary arteries,

but never in the absence of a dilated state of the aorta. The second point to which I wish to call attention is this. In a work of great merit, by Dr. Foster, of Birmingham, the rule is laid down that if an aortic murmur of diastolic rhythm be transmitted to the apex, it is the posterior valve that will be found diseased, whereas, if transmitted to the ensiform cartilage, it will be the anterior valves that are in fault. I have not been able to confirm this doctrine. In the case now before the Society the murmur was loudest at the apex, and faintly audible at the ensiform cartilage; yet here it is the anterior valves that are in defect. The posterior valve had attached to it calcareous masses, and these projected forward so as to cover the defect of the posterior valve, which is the principal one diseased; owing to the reflux thus permitted, a murmur, by defect of the anterior valves, resulted.—*February 6, 1875.*

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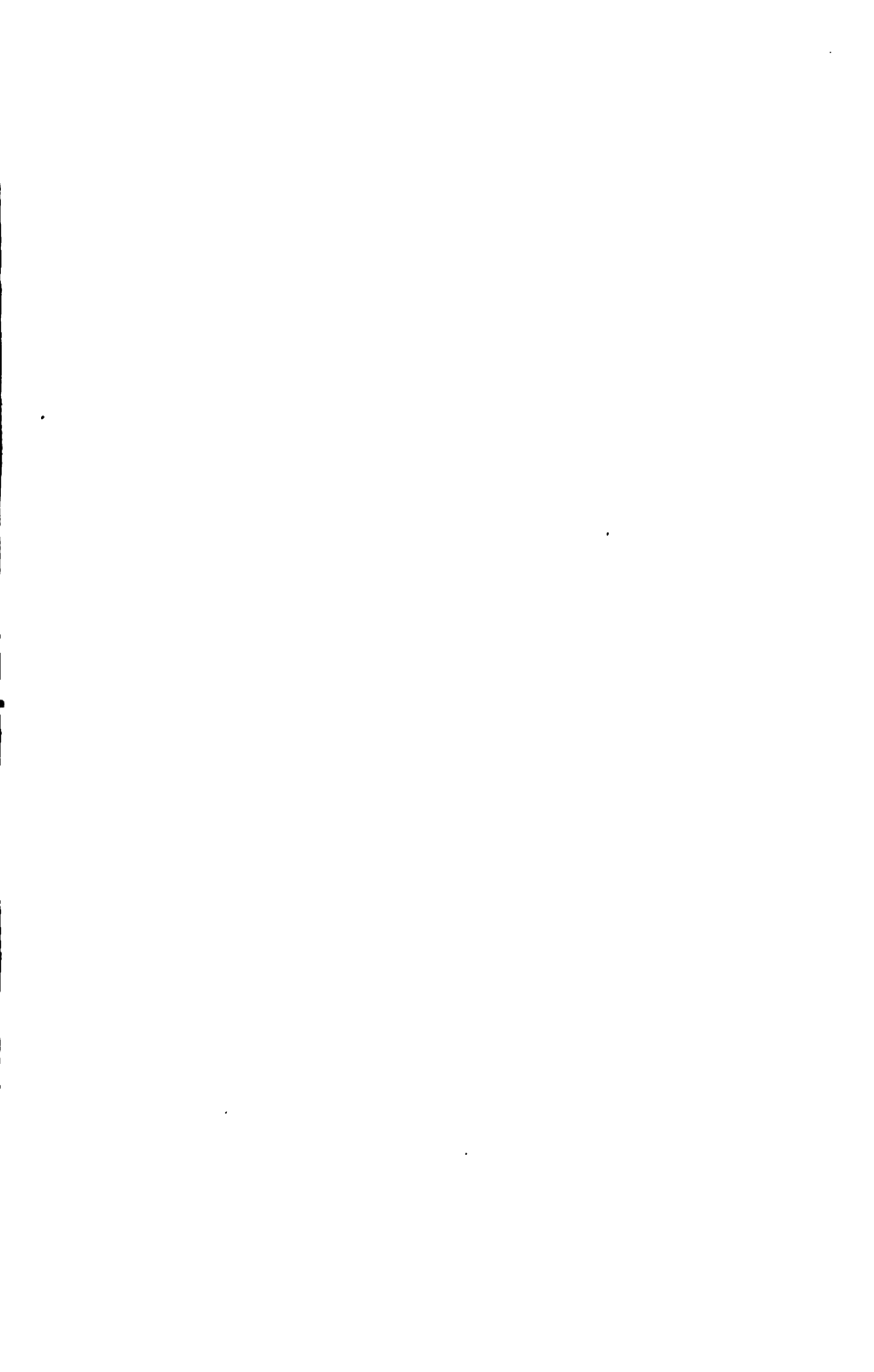
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